Colt Manual No. CM116

M16A2 LIGHT MACHINE GUN(M16A2LMG)

OPERATION AND UNIT MAINTENANCE INSTRUCTIONS

WARNINGS

WARNING: IF THIS FIREARM IS CARELESSLY OR IMPROPERLY HANDLED, UNINTENTIONAL DISCHARGE COULD RESULT AND COULD CAUSE INJURY, DEATH, OR DAMAGE TO PROPERTY.

WARNING: IF THE BARREL IS VERY HOT FROM FIRING, THERE IS A RISK OF COOK-OFF (I.E., A ROUND IN THE CHAMBER DISCHARGING BY ABSORBING HEAT FROM THE BARREL). A COOK-OFF CAN OCCUR ANY TIME AFTER CHAMBERING A ROUND IN A VERY HOT BARREL. WHEN THIS CONDITION IS SUSPECTED, THE CHAMBER MUST BE CLEARED IMMEDIATELY.

WARNING: DO NOT ATTEMPT TO FIRE IF WATER IS IN THE BARREL FROM FORDING, HEAVY RAIN OR THICK FOG. OPEN THE BOLT AND ALLOW WATER TO DRAIN BEFORE FIRING. CLEAN A WET WEAPON AS SOON AS POSSIBLE.

WARNING: WRONG LOADING SEQUENCE COULD CAUSE UNINTENTIONAL DISCHARGE. NEVER INSTALL LOADED MAGAZINE IN LMG WITH BOLT FORWARD. BOLT MUST BE FULLY TO THE REAR WITH FIRE CONTROL SELECTOR ON SAFE BEFORE LOADED MAGAZINE IS INSTALLED.

FIVE BASIC SAFETY RULES

1. **Always point a gun in a safe direction.**
2. **Keep fire control selector on SAFE until ready to fire.**
3. **Unload when not in use.**
4. **Always ensure a gun is not loaded before cleaning or dismantling.**
5. **Practice handling an empty gun before attempting to fire.**

CAUTIONS FOR FIRING

1. **Wear ear and eye protection when shooting on a range to reduce the risk of cumulative long-term permanent hearing loss and eye injury.**

2. **Be sure of your target and the area behind it. Without an adequate backstop, bullets may travel up to 3 miles past or through your target.**

3. **Take precautions to avoid contamination by accumulations of toxic gas fumes or lead dust where firearms are used indoors or within a confined space.**

CAUTIONS FOR MAINTENANCE

1. **Before stripping, cleaning or inspection, remove magazine and unload weapon to prevent firing.**

2. **Wear safety glasses in case you lose control of a spring loaded component which could injure your eyes.**

3. **Do not permit live ammunition in or near the work area.**

4. **Take precautions when handling cleaning fluids and lubricants. If in doubt, seek advice from the manufacturers of these products.**

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LIST OF ILLUSTRATIONS

LIST OF ILLUSTRATIONS

Appendix

ASSOCIATED MANUAL

The scope of this manual, CM116, is outlined in Page 1.

When deeper maintenance is required, refer to Colt Manual CM117. It provides inspection and maintenance instructions for armorer and depot shop personnel. CM117 describes procedures that require tools and equipment not normally available to the operator or unit armorer.

ADMINISTRATION

User reports of errors or omissions and recommendations for improving this manual are encouraged and should be sent to:

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Hartford, CT 06144-1868
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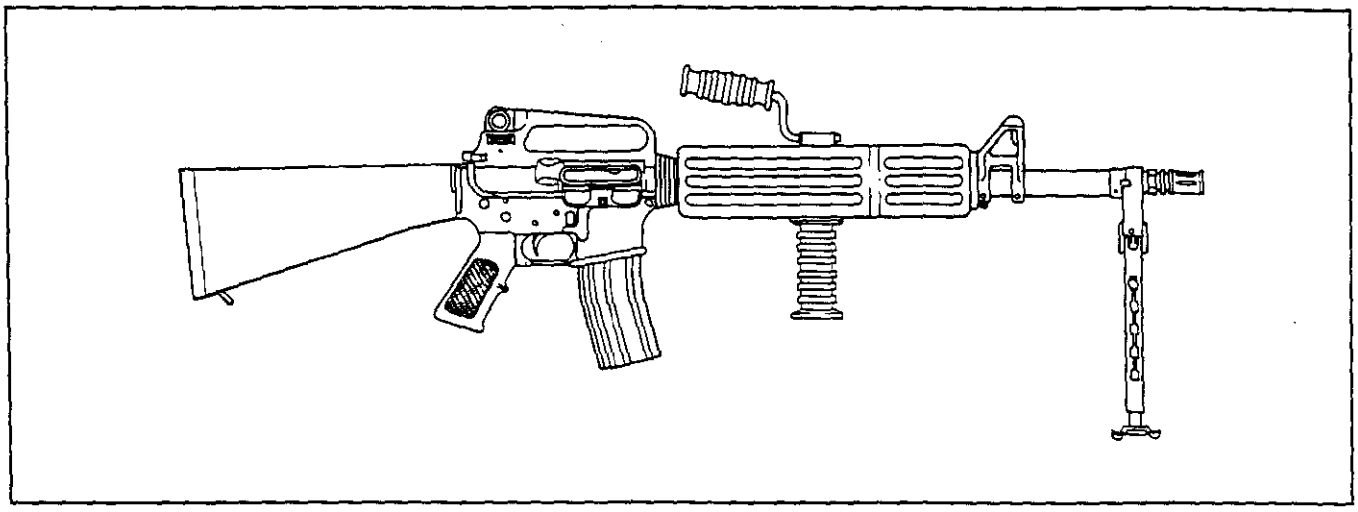
M16A2 LIGHT MACHINE GUN (LMG) (COLT MODEL 750)



M16A2 LMG - Heavy Barrel, fully adjustable rear sight, bipod and an open bolt fully automatic action combine to make this an effective squad support weapon with a high sustained rate of fire.

Weight:

M16A2 - Empty (with bipod but without magazine and sling)	12.9 lb	5.85 kg
Sling	0.20 lb	91 g
Empty Magazine (30 rd)	0.25 lb	113 g
Loaded Magazine (30rd)	1.00 lb	454 g
M16A2 LMG with Loaded 30 rd magazine and Sling	14.1 lb	6.40 kg

Length:

Overall with Compensator	39.63 in	1.00m
Barrel	20 in	51cm
Barrel with Compensator	21 in	53cm

Mechanical Features:

Rifling, R.H. 6 grooves 1 turn in . . . . . 7 in	18cm
Method of Operation:	Gas
Type of Breech Mechanism:	Rotating Bolt/Open Bolt
Method of Feeding:	Magazine
Cooling:	Air

Ammunition: 5.56 x 45mm NATO cartridge (M855 or SS109) or 5.56 x 45 mm US Standard cartridge (M193)

Firing Characteristics:

	Using Ammunition			
	M885		M193	
Muzzle Velocity (approx)	3110 ft/sec	948 m/s	3250 ft/sec	991 m/s
Muzzle Energy	1302 ft lb	1765 J (joule)	1270 ft lb	1722 J (joule)
Chamber Pressure (max)	50750 psi	3499 bar	52000 psi	3585 bar
Cyclic Rate of Fire	600 - 800 rounds/minute		600-800 rounds/minute	
Maximum Rate of Fire:				
Automatic	150-200 rounds/minute		150-200 rounds/minute	
Sustained Rate of Fire	65 rounds/minute		65 rounds/minute	
Maximum Range	3935 yd	3600m	3902 yd	2653m

CHAPTER I - INTRODUCTION

SECTION 1 - SCOPE OF MANUAL

1-1 Scope

This manual describes the operation of the 5.56mm fully automatic M16A2 LMG. It also provides operator and unit level maintenance instructions for this weapon and its accessories.

SECTION 2 - DESCRIPTION AND DATA

1-2 Description (refer to Figures 1-1, 1-2 and 1-3)

The M16A2 Light Machine Gun (LMG) is a lightweight, air cooled, gas operated and magazine fed fully automatic weapon. It fires from an open bolt position and does not fire semi-automatic, but like other M16 weapons, it is easily opened for cleaning and inspection. Further details of major components follow.

1-2.1 Upper Receiver and Barrel Assembly Group

1-2.1.1 Barrel Group The barrel group consists of the barrel and barrel extension assembly, the handguard cap, the front sight group, the compensator, barrel nut and slip ring assembly, bipod bushing, handguards with forward grip and forward carrying handle. The handguards have heat resisting inner shields and are interchangeable between left and right. The front sight group is made up of the forward sling swivel assembly, the front sight and gas tube assembly and the front sight post which is adjustable vertically.

1-2.1.2 Upper Receiver Group The upper receiver group consists of the upper receiver, bolt carrier assembly, charging handle, ejection port cover assembly and a mounting for the barrel assembly. A carrying handle forms the top of the upper receiver. An adjustable rear sight is housed in the handle where provision is also made for a telescope sight to be attached.

1-2.2 Bipod Assembly

The bipod assembly includes pivot, legs, feet and springs and is assembled as a unit to a bushing on the barrel.

1-2.3 Lower Receiver and Buttstock Assembly

The lower receiver and buttstock assembly consists of the lower receiver, the pistol grip, lower receiver extension and buttstock. The lower receiver houses the hammer, trigger, fire control selector, bolt catch, disconnect, automatic sear and magazine catch. The receiver extension tube,which is the mounting device for the buttstock, contains the buffer assembly and the action spring. The receiver is aluminum alloy, durable yet light in weight. Buttcap and pistol grip are made of a material which will withstand impact blows and resist chemical contamination, while the buttstock is a fiberglass composite for even greater strength.

FIGURE 1-1 MAJOR GROUPS OF M16A2 LMG

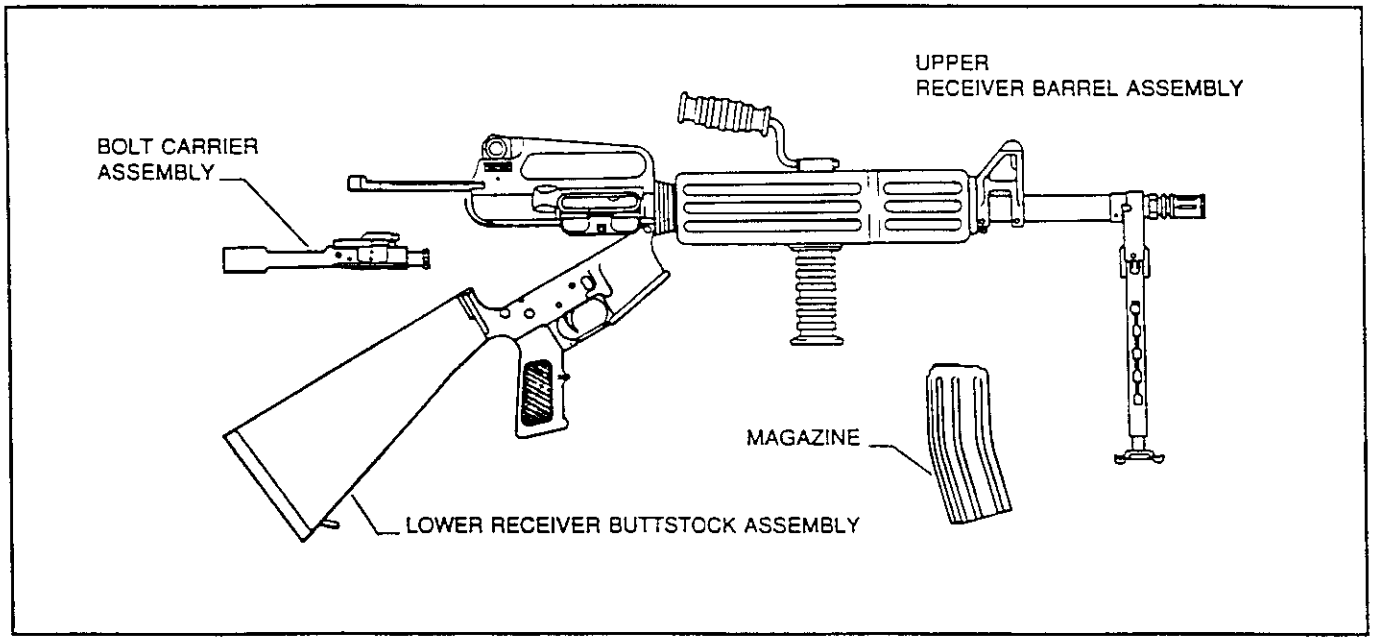
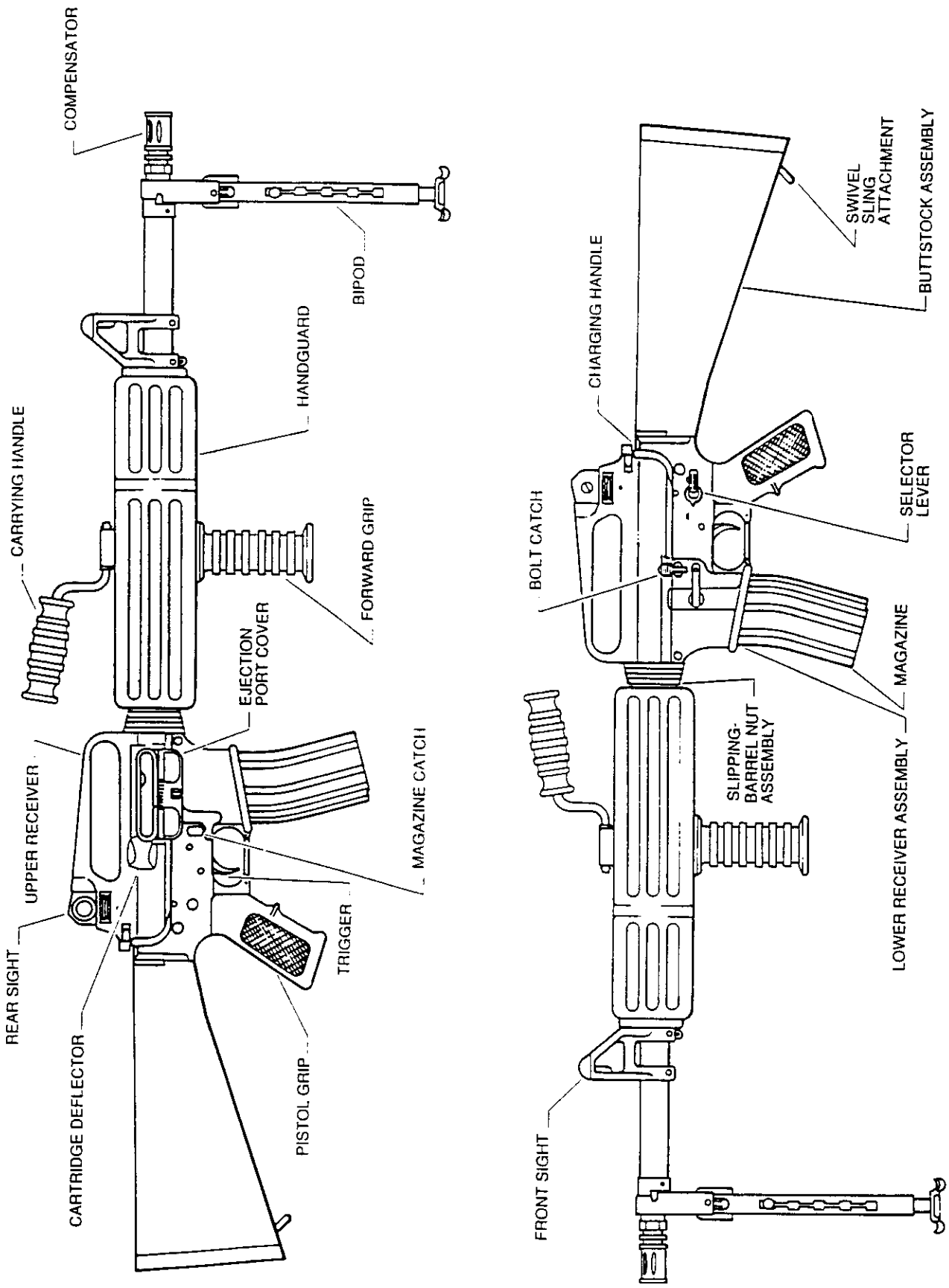


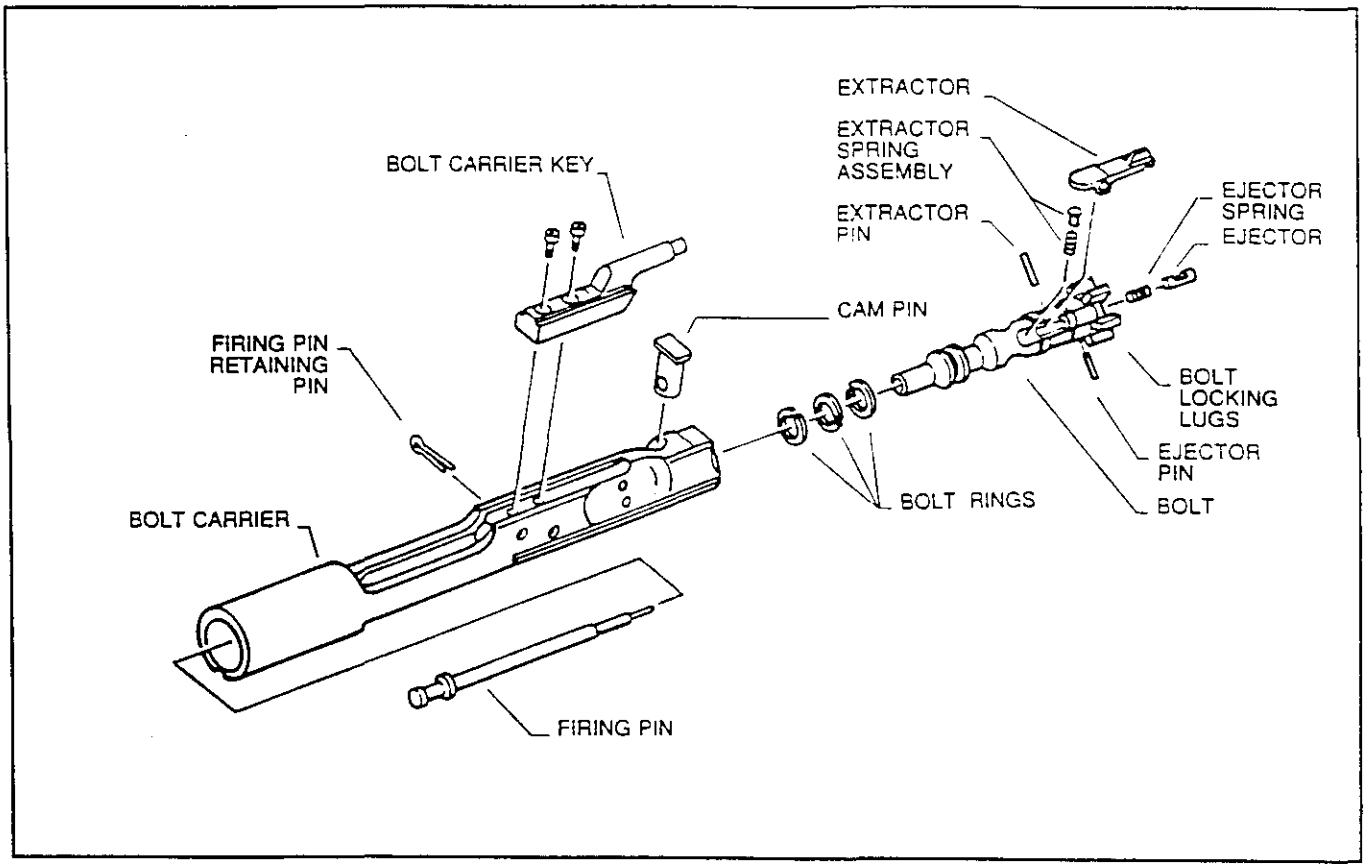
FIGURE 1-2 M16A2 LMG PARTS



1-2.4 Bolt Carrier Assembly (See Figure 1-3)

The bolt carrier assembly consists of the bolt carrier, key, bolt assembly, firing pin, firing pin retaining pin, cam pin, extractor assembly and ejector. The rotary bolt locking action is one of the mechanical features of the rifle. The bolt and barrel extension contain locking lugs which engage and lock the bolt firmly to the barrel extension. The initial force of the cartridge explosion is absorbed by the barrel, barrel extension and bolt.

FIGURE 1-3 BOLT CARRIER ASSEMBLY



1-2.5 Tabulated Data

For tabulated data on the M16A2 LMG weapon, see Page IV at the beginning of this manual.

CHAPTER II - OPERATION

SECTION 1 - CYCLE OF OPERATION

2-1 Cycle of Operation

The cycle of operation of the M16A2 LMG is described as follows:

CAUTION: ENSURE CHAMBER IS EMPTY BEFORE STARTING MAINTENANCE PROCEDURES.

2-1.1 Cocking

The M16A2 LMG is cocked before loading by pulling the charging handle rearward. This pulls the bolt carrier group to the rear. As the carrier moves rearward, it cocks the hammer. When the charging handle is pulled fully rearward and returned forward to the latched position, it leaves the carrier group cocked in the open bolt position. It remains cocked by the sear surface on top of the hammer engaging a corresponding surface on the bottom of the bolt carrier.

WARNING: WRONG LOADING SEQUENCE COULD CAUSE UNINTENTIONAL DISCHARGE. NEVER INSTALL LOADED MAGAZINE IN LMG WITH BOLT FORWARD. BOLT MUST BE FULLY TO THE REAR WITH FIRE CONTROL SELECTOR ON "SAFE" BEFORE LOADED MAGAZINE IS INSTALLED.

2-1.2 Feeding and Chambering

With the LMG cocked and a loaded magazine installed, a cartridge will be fed into the chamber when the trigger is pulled to fire the weapon. With the fire control selector (Figure 2-8 Page 11) set to FIRE and trigger pulled, a connector rotates the automatic sear and the lower sear leg pushes down on the hammer. This releases the bolt carrier group but keeps the hammer cocked against the automatic sear. The action spring drives the carrier forward. As the carrier moves forward, the lugs of the bolt pick up a cartridge from the magazine (see Figure 2-1, Page 7) and feeds it into the chamber. (See Figure 2-2, Page 7). As the bolt locking lugs enter the barrel extension, the ejector is compressed against the left side of the cartridge head and the extractor snaps into the extractor groove on the right side of the cartridge.

2-1.3 Locking (See Figure 2-3, Page 8)

When the forward motion of the bolt and cartridge are stopped by the chamber, the bolt carrier continues forward. The cam slot in the carrier bears against the cam pin causing it to rotate the bolt while the carrier completes its forward travel and stops against the rear face of the barrel extension. As the bolt rotates, its lugs engage the lugs in the barrel extension. This action locks the bolt in battery and this is known as the "closed bolt" condition.

FIGURE 2.1 FEEDING

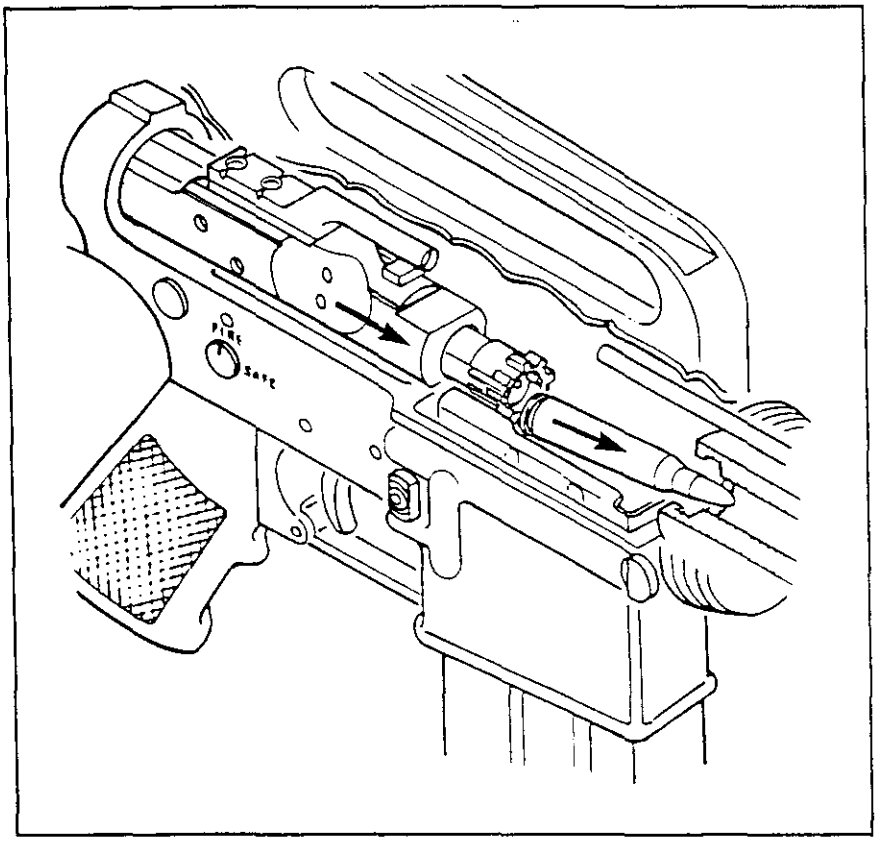


FIGURE 2.2 CHAMBERING

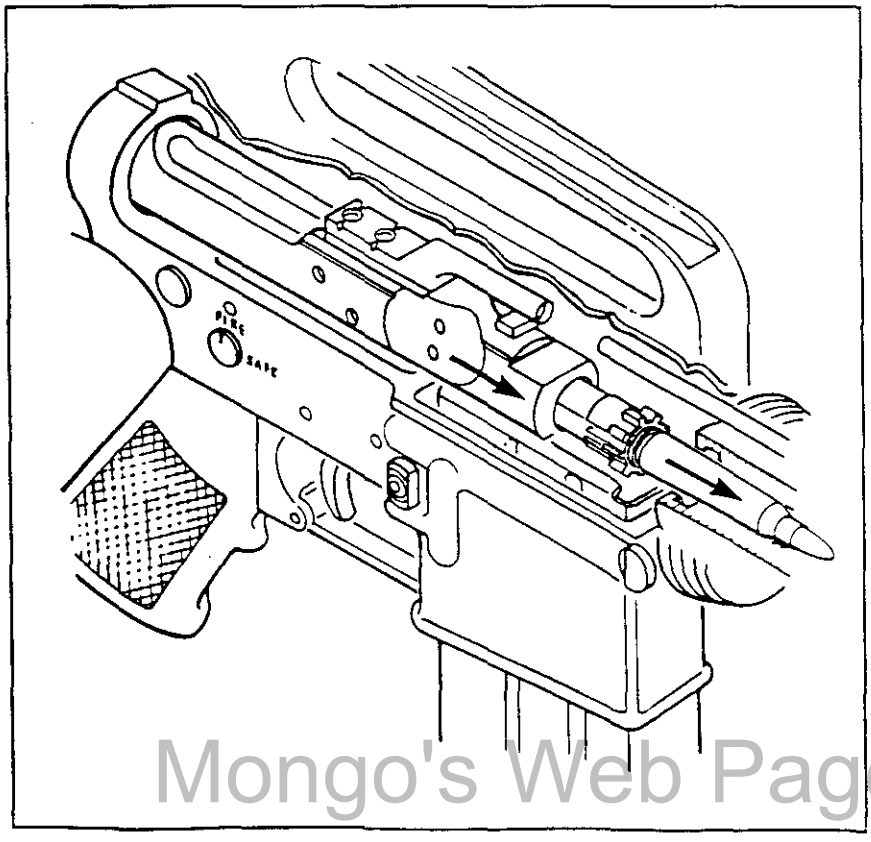


FIGURE 2.3 LOCKING

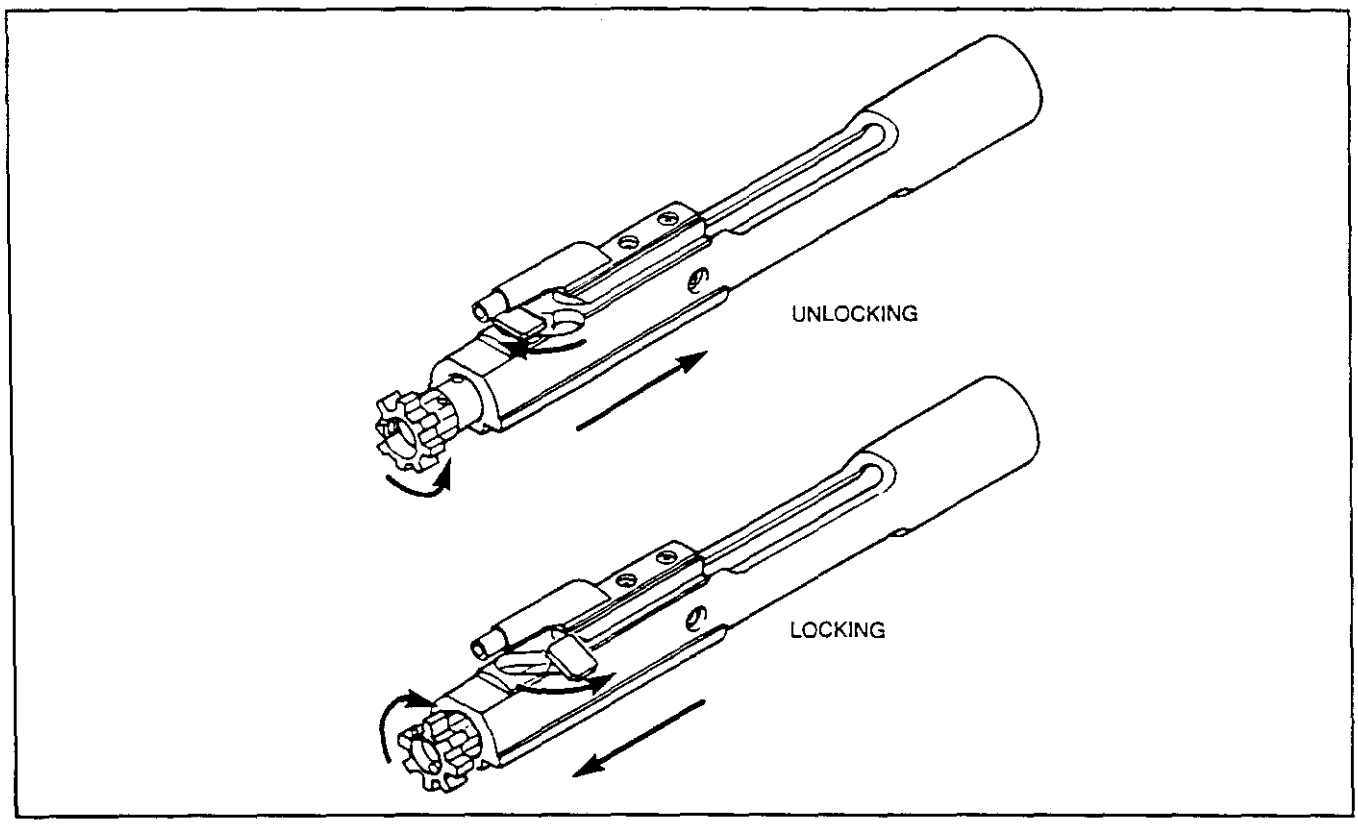
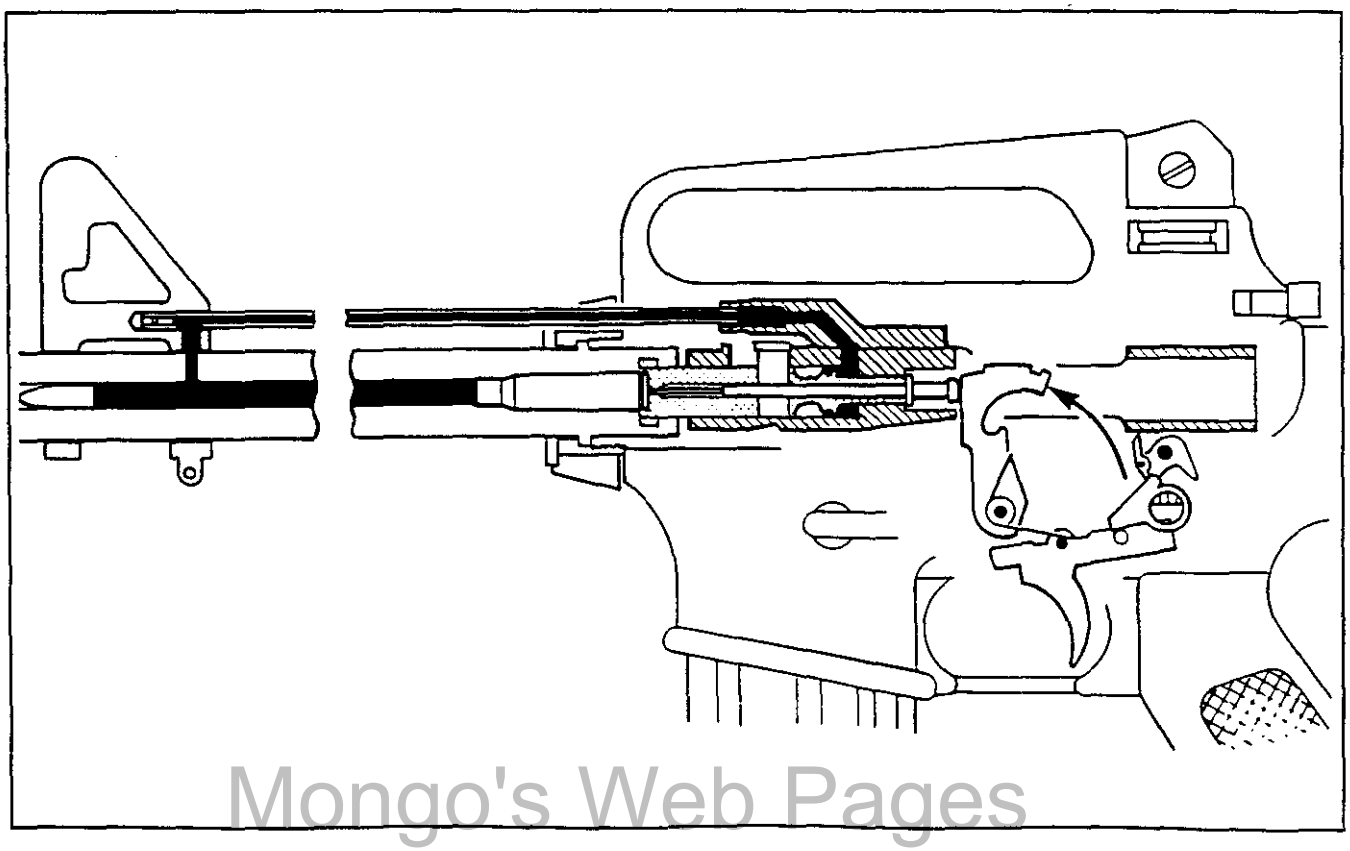


FIGURE 2.4 FIRING



2-1.4 Firing

When the fire control selector is set to FIRE and the trigger is pulled, feeding, chambering and locking takes place. Final forward movement of the bolt carrier which locks the bolt also trips the automatic sear. This releases the hammer. The hammer spring drives the hammer against the firing pin, which strikes the cartridge primer to discharge the chambered round (Figure 2-4, Page 8). As the bullet leaves the muzzle of the barrel, gas and flame are deflected upward by the compensator. This helps keep the muzzle down, reduces the flash and minimizes the amount of dust raised when firing close to the ground.

2-1.5 Unlocking (See Figure 2-3, Page 8)

The pressure of the gas generated by the burning of the propellant drives the projectile down the barrel and past the gas port. A small quantity of the gas is bled off. It passes through the gas port, gas tube and bolt carrier key into a cylindrical section in the bolt carrier where it expands and drives the bolt carrier rearward. During the first rearward travel of the carrier, the bolt is rotated by the cam pin acted on by the bolt carrier cam slot. This rotation disengages the bolt lugs from the barrel extension lugs so that bolt is unlocked. The carrier then continues rearward with the unlocked bolt.

2-1.6 Extraction (See Figure 2-5, Page 10)

As the bolt is moved rearward by the carrier, the extractor is engaged in the extractor groove of the fired cartridge case and withdraws it from the chamber.

2-1.7 Ejection (See Figure 2-6, Page 10)

When the extractor has drawn the spent case out of the chamber, the spring loaded ejector, acting against the left side of the case head, pushes the spent case out of the ejection port. The ejection port is located on the right side of the upper receiver.

2-1.8 Cocking (after firing)

As the carrier group continues rearward in recoil, it compresses the action spring and cocks the hammer.

NOTE: Different actions now take place dependent upon whether the magazine is loaded or empty.

2-1.8.1 Magazine Empty When the magazine is empty, the bolt catch functions to hold the bolt carrier group to the rear. When the magazine catch is pressed to release the empty magazine, it also releases the bolt catch. The bolt carrier then moves slightly forward until it is held cocked open against the sear surface on top of the hammer. In this way, the empty magazine can be removed; and when replaced with a loaded magazine, the LMG is immediately ready to fire.

2-1.8.2 Magazine Loaded When ammunition remains in the magazine, the bolt carrier will cock the hammer and then be returned forward by the action spring to feed the next round and fire again. This will continue until the magazine is empty or until the trigger is released. When the trigger is released, the lower leg of the automatic sear which engages the hammer is rotated slightly by the connector. This movement allows the hammer to move up and the sear surface on top of the hammer engages the carrier to hold it to the rear until the trigger is pulled again.

FIGURE 2-5 EXTRACTING

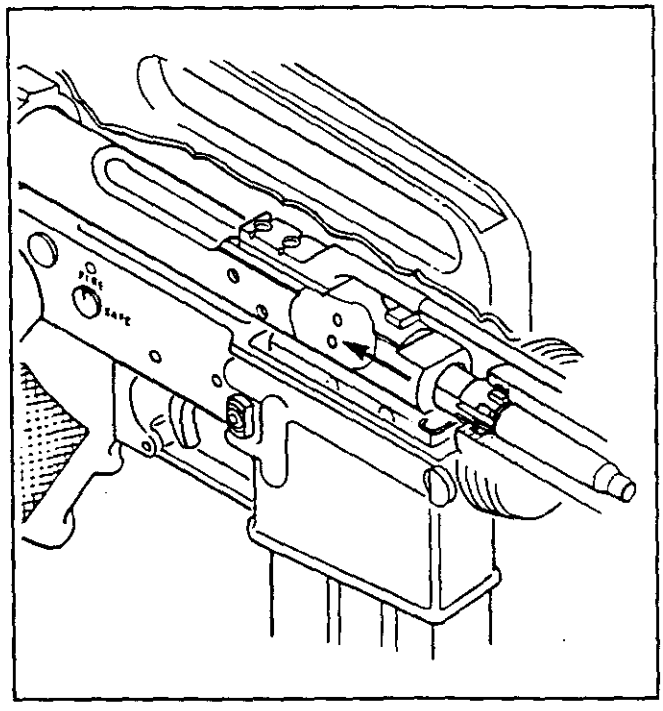
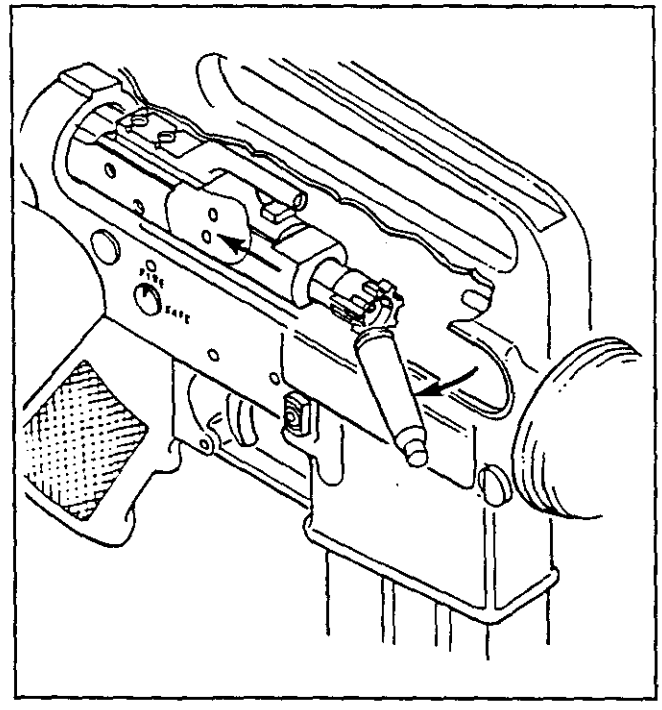


FIGURE 2-6 EJECTING



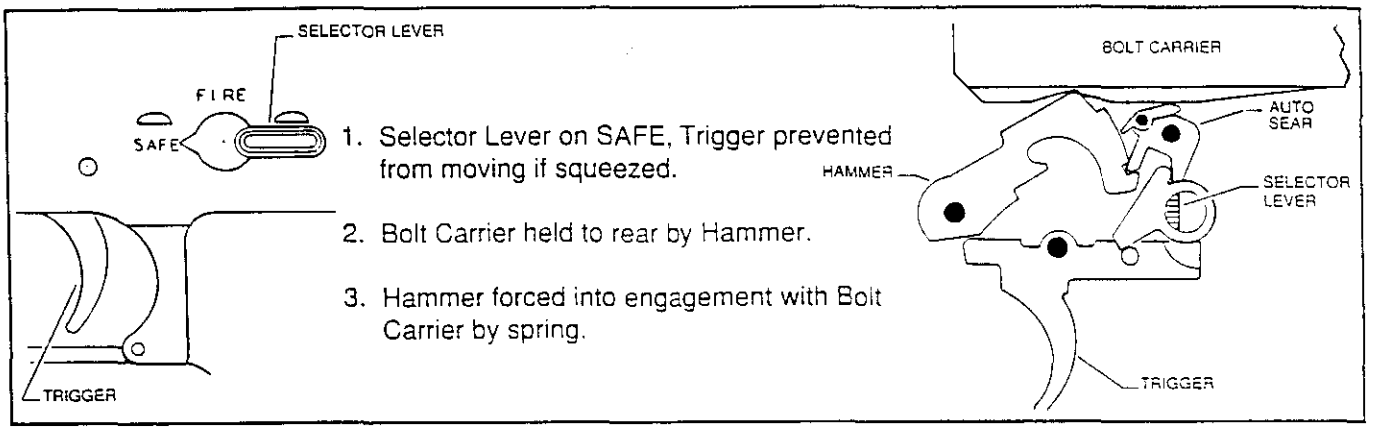
2-1.9 Buffering

The rearward or recoil movement of the carrier "group" is arrested by the buffer assembly acting against the bottom of the receiver extension.

2-1.10 Counter-Recoil

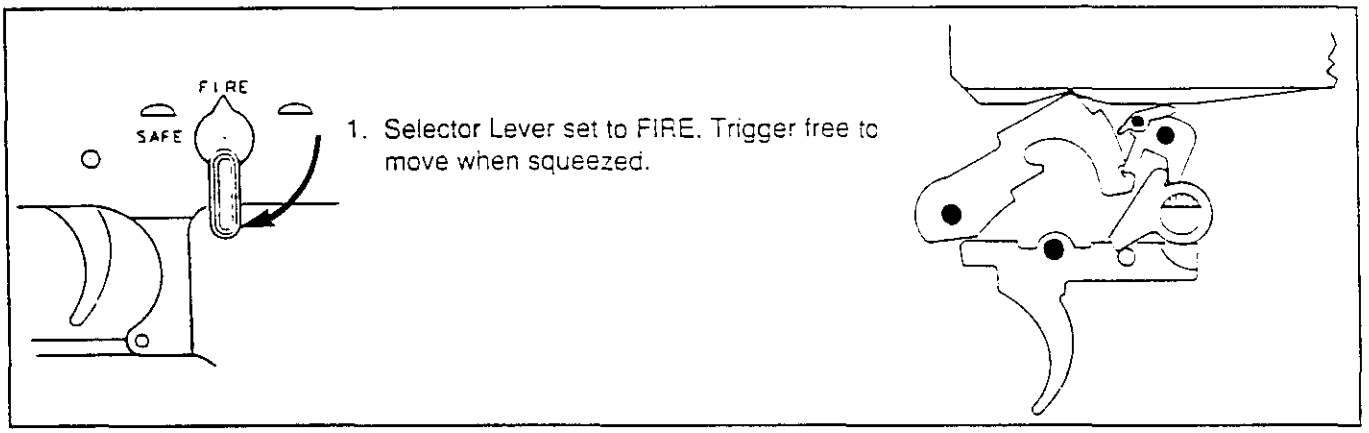
After buffering, the action spring forces the carrier forward toward the chamber.

FIGURE 2-7 FIRING MECHANISM - SAFE

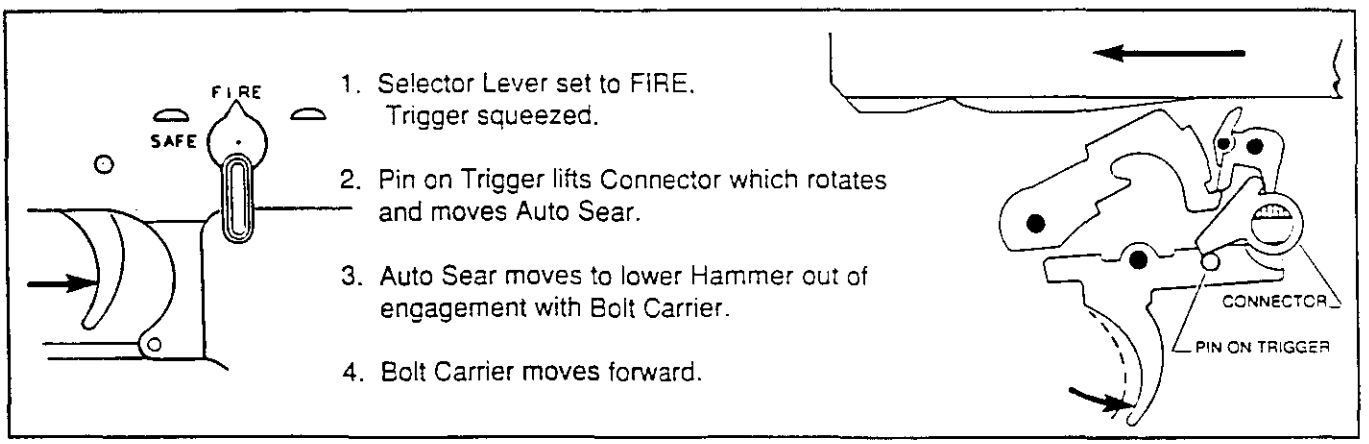


1. Selector Lever on SAFE, Trigger prevented from moving if squeezed.
2. Bolt Carrier held to rear by Hammer.
3. Hammer forced into engagement with Bolt Carrier by spring.

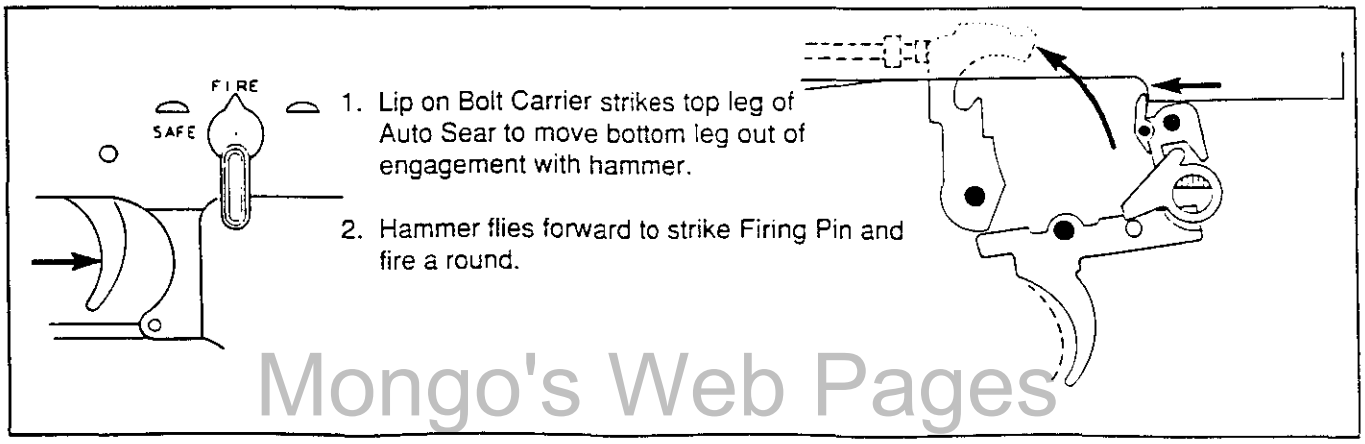
FIGURE 2-8 FIRING MECHANISM - FIRE



1. Selector Lever set to FIRE. Trigger free to move when squeezed.



1. Selector Lever set to FIRE. Trigger squeezed.
2. Pin on Trigger lifts Connector which rotates and moves Auto Sear.
3. Auto Sear moves to lower Hammer out of engagement with Bolt Carrier.
4. Bolt Carrier moves forward.



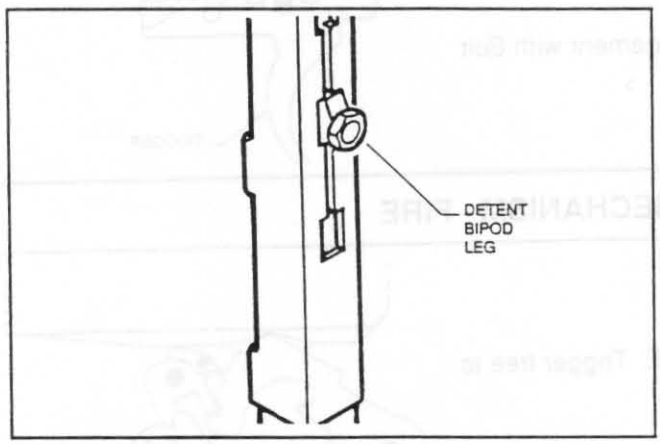
1. Lip on Bolt Carrier strikes top leg of Auto Sear to move bottom leg out of engagement with hammer.
2. Hammer flies forward to strike Firing Pin and fire a round.

SECTION 2-CONTROLS

2.2 General

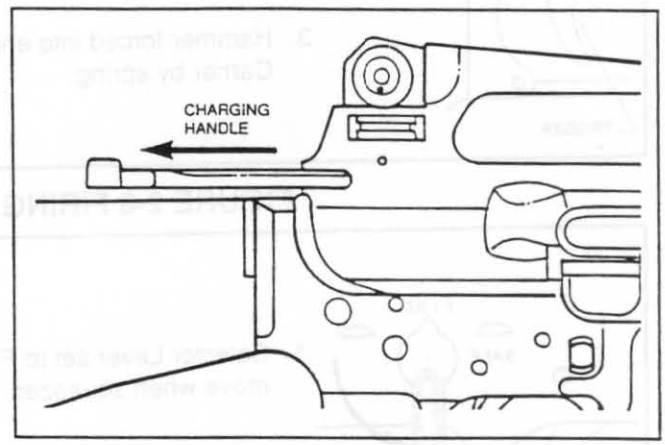
This section tells you about the controls on the M16A2 Light Machine Gun. Pictures show where they are on the weapon and a description explains how they should be used.

FIGURE 2-9 CONTROLS



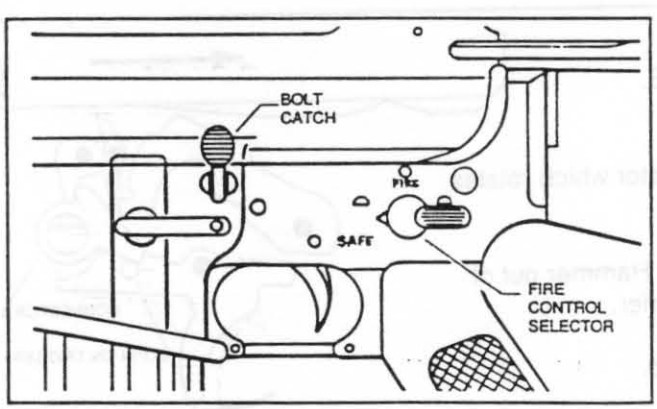
1. DETENT, BIPOD LEG

Holds Bipod at selected extension position.
Press to release.



2. CHARGING HANDLE

Retracts Bolt Carrier and Bolt. Has a thumb latch to lock it in forward position.

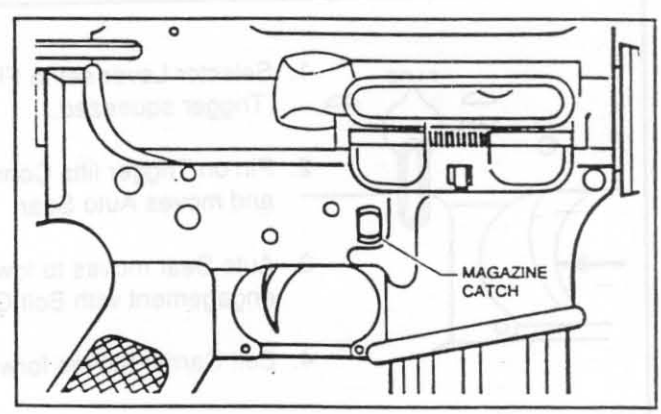


3. BOLT CATCH

Holds bolt carrier and bolt in open position when magazine is empty. It is released when magazine catch is pressed.

FIRE CONTROL SELECTOR

Used to select SAFE or FIRE.



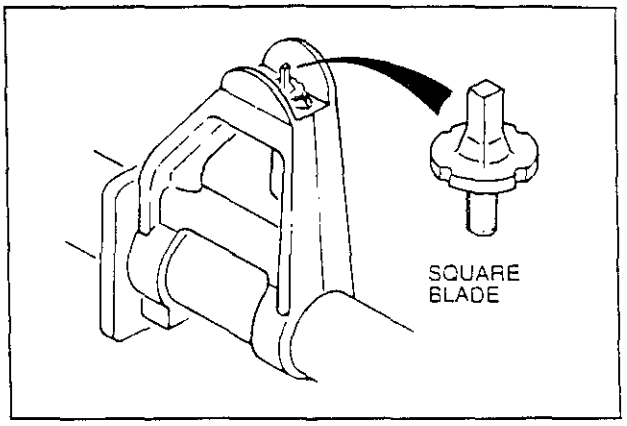
4. MAGAZINE CATCH

Retains Magazine in rifle. Press to re lease Magazine. It also releases the Bolt Catch.

FIGURE 2-9 CONTROLS (CONT)

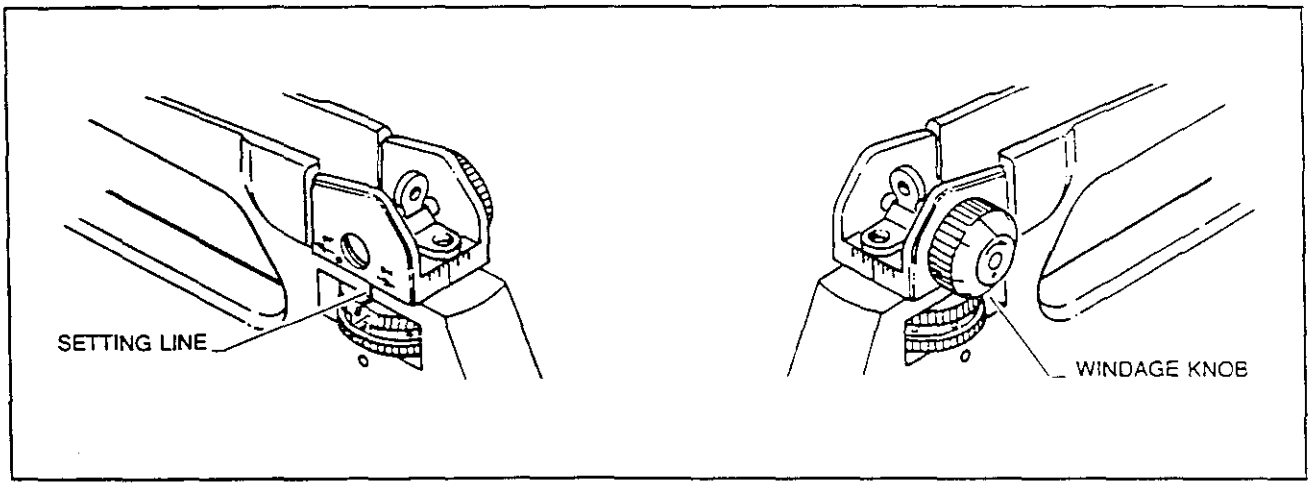
5. FRONT SIGHT

The four-position square blade front sight is used with the fully adjustable rear sight to zero the weapon.



To adjust front sight, depress detent and rotate post. Each notch moves point of impact up or down 3.5cm at 100m range or 1 inch at 100 yard range.

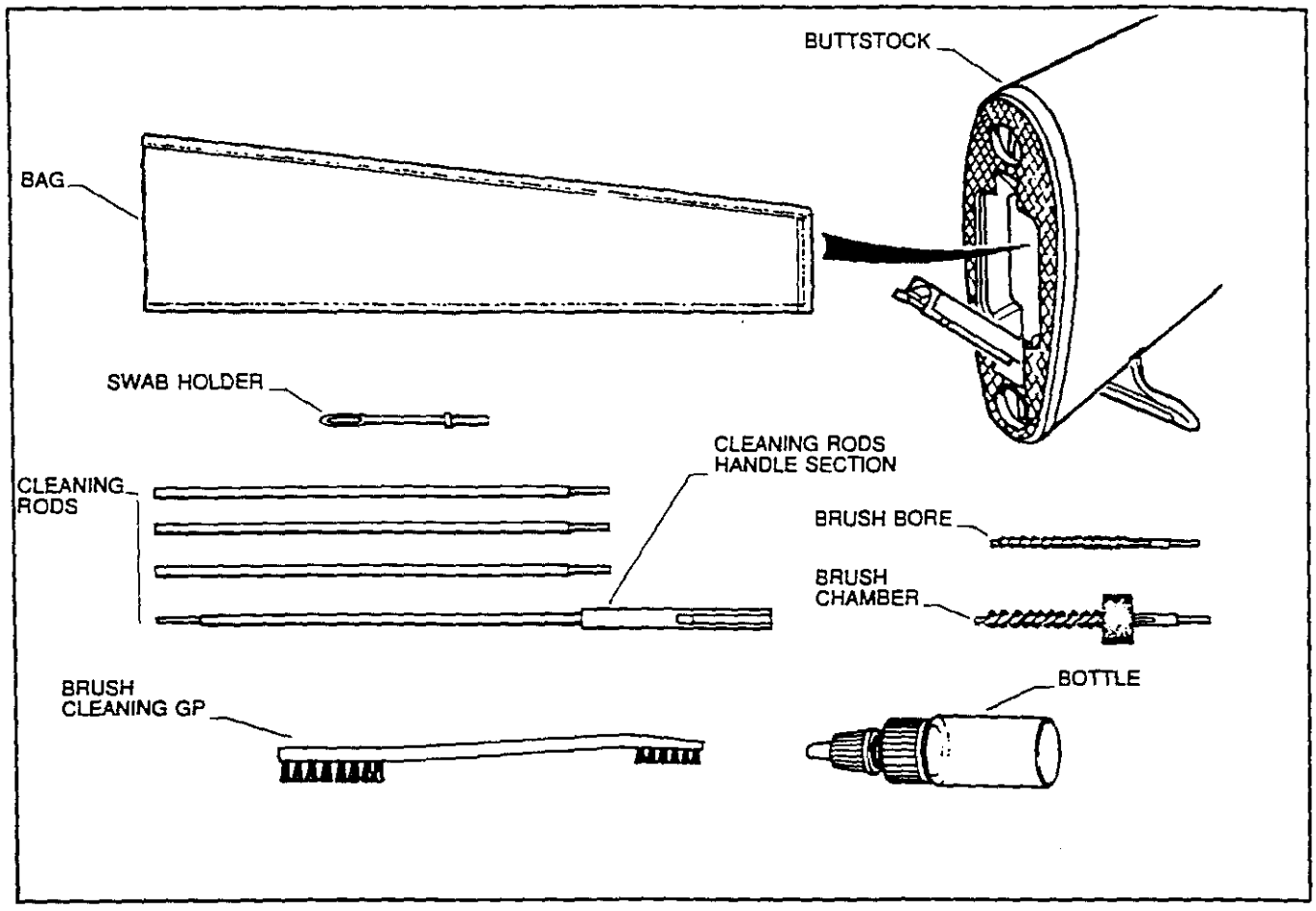
6. REAR SIGHT - FULLY ADJUSTABLE



Fully adjustable rear sight is combined with a flip-type peep sight. When flipped forward, the large aperture marked 0-2 is up. It is used with the elevation knob set to 8/3 low for ranges between 0 and 200 meters. The setting line is above the knob on the left side. When the large aperture is flipped back and down, the small aperture is up. This is used for ranges of 300m to 800m by setting the elevation knob at the range required; 8/3 low for 300m, 4 for 400m, 5 for 500m, 6 for 600m, 7 for 700m and 8/3 high for 800m. There are also additional clicks between the main settings to allow fine adjustment of range.

A windage knob on the right and above the elevation knob is adjustable. Each click moves point of impact horizontally on the target. To move point of impact to right, turn windage knob clockwise; to move point of impact to left, turn windage knob counter-clockwise.

FIGURE 2-10 BUTTSTOCK STOWAGE (CLEANING KIT)



SECTION 3 - OPERATING INSTRUCTIONS - USUAL CONDITIONS

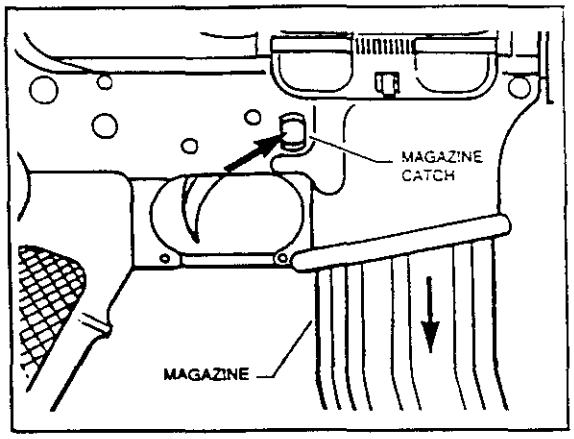
2-3 General

This section tells you how to operate the M16A2 LMG under **usual** conditions. Usual conditions mean moderate temperatures and moderate humidity. Instructions for operation under unusual conditions are covered in Section 4.

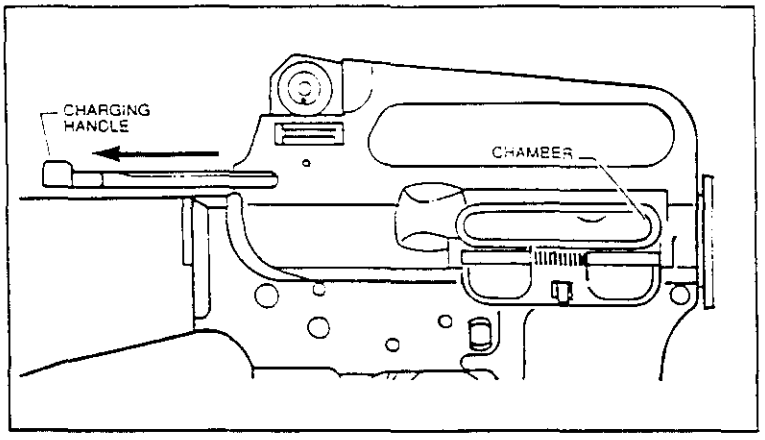
2-3.1 Clearing

2-3.1.1 Clear weapon as shown in Figure 2-11.

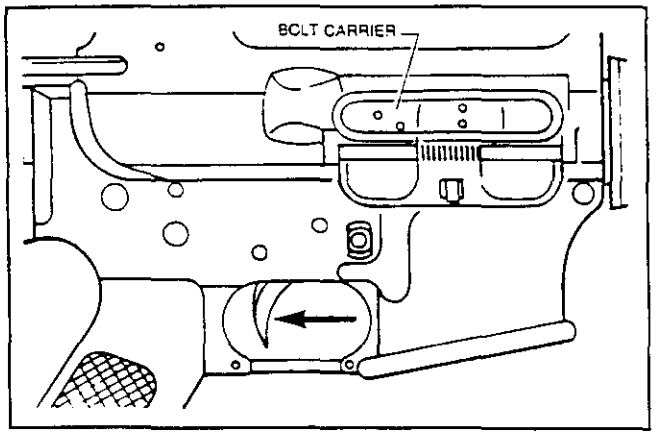
FIGURE 2-11 CLEARING THE WEAPON



STEP 1 Remove Magazine. Press Magazine Catch and drop Magazine into your hand.



STEP 2 Pull Charging Handle back and inspect Chamber to ensure it is empty. Push Charging Handle forward.



STEP 3 Pull Trigger to allow Bolt Carrier to go forward.

2-3.1.2 Clean and lubricate as indicated in Section 7, Page 27.

2-3.2 Loading

FIGURE 2-12 MAGAZINE LOADING, CARTRIDGE ORIENTATION

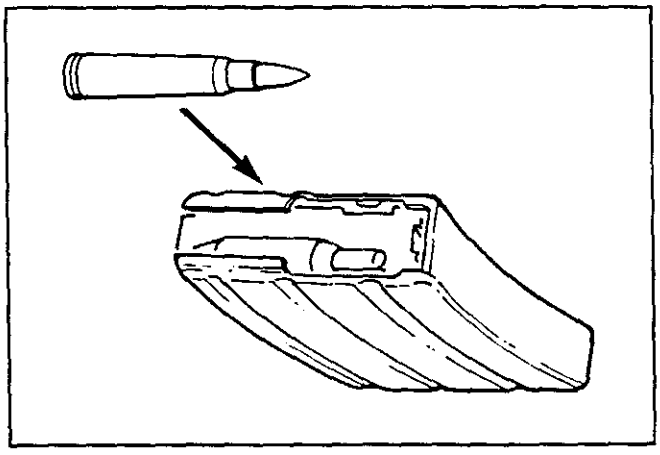
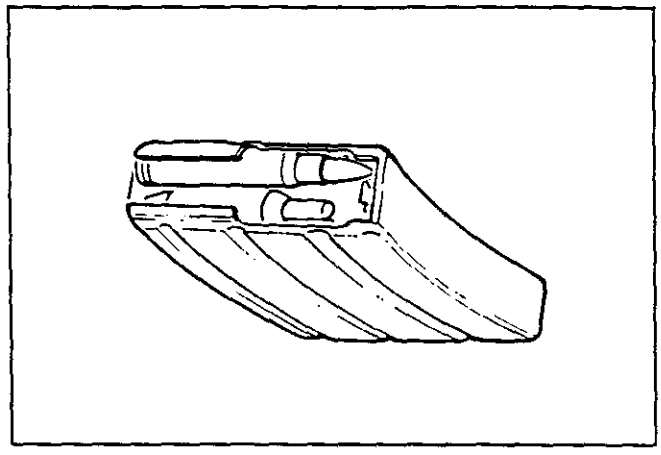


FIGURE 2-13 MAGAZINE LOADED, FIRST CARTRIDGE



2-3.2.1 Loading the Magazine Some 20 round magazines may still be in use, but the standard magazine has a capacity of 30 rounds and may be loaded with any number of rounds up to capacity. The magazine follower has a raised portion resembling the outline of a cartridge. Cartridges are loaded into the magazine so that the tips of the bullets point in the same direction as the smaller end of the raised portion of the follower (see Figure 2-12 and 2-13 above).

WARNING: WRONG LOADING SEQUENCE COULD CAUSE UNINTENTIONAL DISCHARGE. NEVER INSTALL LOADED MAGAZINE IN LMG WITH BOLT FORWARD. BOLT MUST BE FULLY TO THE REAR WITH FIRE CONTROL SELECTOR ON "SAFE" BEFORE LOADED MAGAZINE IS INSTALLED.

2-3.2.2 Loading the Weapon The magazine must be inserted with the bolt open. Grasp the pistol grip, point the muzzle in a safe direction and insert the loaded magazine into the magazine housing. Push upward with sufficient force to ensure the magazine catch engages and holds the magazine.

The weapon is now loaded and can be fired when the fire control selector is in the FIRE position and the trigger is pulled.

CAUTION: IF NOT READY TO FIRE, SET THE FIRE CONTROL SELECTOR TO "SAFE" TO REDUCE RISK OF ACCIDENTAL DISCHARGE.

2-3.2.3 Extending the Bipod Set fire control selector to SAFE. Pull bipod legs down from their stowed position and adjust length of each leg to suit terrain.

2-3.3 Precautions for Ammunition

2-3.3.1 Information concerning the type of ammunition which is authorized for use in the weapon is given in Chapter V, Page 66. In addition, the precautions given in the following paragraphs should be closely observed in order to reduce the risk of injury to personnel or damage to material.

2-3.3.2 Ammunition which is corroded should not be fired.

2-3.3.3 Cartridge cases are easily dented and should be protected from hard knocks and blows. Dented cartridge cases may be difficult to chamber. The mechanism may jam and be difficult to lock and extract.

2-3.3.4 Cartridges which have been seriously damaged, or those having loose bullets, should not be used.

2-3.3.5 Cartridges should be kept clean.

2-3.3.6 Cartridges whose temperature has been raised to 55°C (130°F), (uncomfortable to hold) or more, due to exposure to the sun or other sources of heat, should not be fired, as dangerously high chamber pressures may result. When returned to lower temperatures, these cartridges should be safe to fire.

2-3.3.7 If a cartridge remains in the chamber of a very hot weapon at any time firing is interrupted, the cartridge should be removed immediately or there should be a 15 minute wait to prevent the possibility of injury to personnel in the event of a cartridge cook-off (see Paragraph 2-3.6.1.2, Page 20).

CAUTION: IF A NOTICEABLE DIFFERENCE IN SOUND OR RECOIL IS EXPERIENCED, STOP FIRING. A BULLET COULD BE STUCK IN THE BARREL. IF YOU FIRE AGAIN BEFORE CLEARING THE BLOCKAGE, THE BARREL MAY BULGE OR BURST AND CAUSE INJURY.

In such instances when the weapon stops firing with the bolt forward, the bolt should be retracted slowly to remove and identify the fired cartridge case. The weapon should be cleared and examined for the presence of unburned propellant grains in the receiver, or the possible presence of a bullet remaining in the bore. Any un burned propellant or obstruction in the bore must be removed before firing again to prevent risk of damage and injury.

NOTE: If a bullet is lodged in the bore, the weapon must be sent to a maintenance facility for proper removal.

2-3.4 Firing

2-3.4.1 Fire Control Selector The weapon may be fired automatically by moving the fire control selector (Figure 2-9.3, Page 12) to the FIRE position.

2-3.4.2 FIRE Position With fire control selector set to FIRE, and the trigger pulled, the weapon will continue to fire until the magazine is empty or the trigger is released.

NOTE: When the last round in the magazine is fired, the bolt will lock in the open position.

2-3.5 Stoppage and Immediate Action

2-3.5.1 Stoppage A stoppage is any unintended interruption of firing. Immediate action must be taken to clear stoppages.

2-3.5.2 Immediate Action Immediate action is the action taken to clear a stoppage without analyzing the cause.

CAUTION: ALSO SEE DANGEROUS SITUATIONS, PARAGRAPH 2-3.6, FOR EMERGENCY IMMEDIATE ACTIONS.

2-3.5.3 Immediate Action 1

2-3.5.3.1 Remove magazine, install loaded magazine.

2-3.5.3.2 CARRY ON FIRING.

2-3-5.4 Immediate Action 2

2-3.5.4.1 If weapon stops with bolt carrier forward, pull charging handle fully and sharply to the rear.

2-3.5.4.2 Watch for cartridge/case to be ejected. Push charging handle forward.

2-3.5.4.3 If cartridge/case is ejected . . . CARRY ON FIRING.

2-3.5.4.4 If cartridge/case is **not** ejected, inspect chamber to assure it is empty, then remove magazine and install loaded magazine . . . CARRY ON FIRING.

2-3.5.4.5 If there is a round in the chamber, take Immediate Action 3.

2-3.5.5 Immediate Action 3

2-3.5.5.1 If there is a round in the chamber and barrel is very hot take cook-off precautions (Page 20). When barrel is cool, remove cartridge/case as follows:

2-3.5.5.2 Ensure magazine is removed.

2-3.5.5.3 Pull charging handle to rear, pull trigger and allow bolt carrier to go forward slowly, controlled by the charging handle.

2-3.5.5.4 Pull out take down pin and hinge, lower receiver away from upper receiver.

2-3.5.5.5 Pull charging handle to rear and remove bolt and bolt carrier.

2-3.5.5.6 Insert cleaning rod through muzzle and knock cartridge/case out of chamber.

2-3.5.5.7 When time permits, clean barrel and chamber.

2-3.5.5.8 Reassemble weapon.

2-3.5.5.9 Install loaded magazine and CARRY ON FIRING.

CAUTION: ALSO SEE DANGEROUS SITUATIONS, PARAGRAPH 2-3.6, FOR EMERGENCY IMMEDIATE ACTIONS.

2-3.5.6 Immediate Action 4

If weapon fails to fire after performing Immediate Actions 1, 2 and 3, clear weapon and see Troubleshooting in Chapter III, Section 5, Page 51.

2-3.6 Misfires and Cook-offs are Dangerous Situations

2-3.6.1 General The malfunctions described in the following paragraphs are rarely encountered when properly maintained ammunition of the correct type is fired in properly maintained and operated weapons. However, all personnel concerned with the weapon must understand the nature of each kind of malfunction as well as the proper preventive and corrective procedures in order to maintain firepower and to avoid injury to personnel or damage to property.

The M16A2 LMG firing from an open bolt position helps keep the barrel cool and further minimizes the risk of cook-off. But if a misfire occurs, the bolt will remain locked forward and prompt, appropriate action must be taken to clear the stoppage and prevent the risk of cook-off.

2-3.6.1.1 Misfires A misfire is a complete failure to fire which may be due to a faulty firing mechanism in the weapon or a faulty element in the propelling charge explosive train of the cartridge.

2-3.6.1.2 Cook-off A cook-off is a functioning of any or all of the explosive components of a cartridge chambered in a very hot weapon because of heat from the weapon. To prevent injury from a cook-off, follow precautions in Paragraph 2-3.6.2.

2-3.6.2 Precautions

WARNING: A COOK-OFF COULD OCCUR ANY TIME AFTER CHAMBERING A ROUND IN A VERY HOT BARREL.

IMMEDIATE ACTION: To prevent damage of injury from cook-off when barrel is very hot, complete the following actions immediately:

2-3.6.2.1 Remove magazine.

2-3.6.2.2 Pull charging handle fully rearward to extract and eject the misfired round. If round is ejected, allow barrel to cool for 15 minutes.

2-3.6.2.3 If a round remains in the chamber and if it is safe to fire again, do so. If round fires and barrel is very hot, allow barrel to cool for 15 minutes.

2-3.6.2.4 If round remains in chamber and still does not fire, take step 2-3.6.2.6.

2-3.6.2.5 If unsafe to fire again, hold charging handle, pull trigger and allow mechanism to move slowly forward into the closed bolt condition. Then take step 2-3.6.2.6.

2-3.6.2.6 With round in chamber of very hot barrel and bolt closed, lay weapon on the ground pointing in a safe direction with ejection port toward the ground and step back.

2-3.6.2.7 Stand clear, keep others clear and wait 15 minutes for barrel to cool. Do **not** stand in front of the muzzle or in line with magazine well.

WARNING: COOK-OFF COULD OCCUR DURING THIS COOLING PERIOD.

2-3.6.2.8 After the barrel is cool, remove round from chamber as described on Page 15 or as specified in Immediate Action 3, Paragraph 2-3.5.5. Then have weapon checked by the unit armorer before firing again.

2-3.7 Water in Barrel

WARNING: DO NOT ATTEMPT TO FIRE THE WEAPON IF WATER IS PRESENT IN THE BARREL. IMMERSION DURING FORDING, HEAVY RAIN, OR FOG CAN CAUSE WATER TO BE PRESENT IN THE BARREL.

Observe the following procedures to empty water from the barrel:

NOTE: Make certain the muzzle cap is removed before performing the following procedures.

2-3.7.1 Point the muzzle down.

2-3.7.2 Remove magazine, and with bolt carrier in open (cocked) position to vent the barrel, shake the weapon vigorously and allow water to drain from the muzzle.

2-3.7.3 Check if bore is clear. Replace magazine. The weapon can now be fired.

NOTE: Clean and lubricate in accordance with Chapter III, Section 2, Page 30, as soon as possible after weapon gets wet.

2-3.8 Unloading

Repeat steps illustrated in Figure 2-11, Page 15, for clearing the weapon.

SECTION 4 - OPERATING INSTRUCTIONS - UNUSUAL CONDITIONS

2.4 General

This section tells you about operating the M16A2 LMG in **unusual** conditions where there are extremes of heat, cold, or humidity. Because this section adds to the information in Section 3, you have to read both Sections 3 and 4 for all operating instructions.

2-4.1 Operation in Extreme Cold

2-4.1.1 In climates where the temperature is consistently below 0°F, (-18°C), it is necessary to prepare the weapon for cold-weather operation. The weapon should be cleaned as described in Chapter III, Section 2, starting on Page 30. It should be lubricated as indicated in Page 40, but Lubricant Automatic Weapons (LAW) or its equivalent should be used instead of LSA.

2-4.1.2 Exercise the various controls through their entire range at intervals to keep them from freezing in place and to reduce effort required to operate them.

2-4.1.3 Weapons not in use and stored outside must be protected with an appropriate cover.

2-4.2 Operation in Extreme Heat

2-4.2.1 Hot Climates

2-4.2.1.1 When operating in hot climates, the coating of oil necessary for operation and preservation will dissipate quickly. Inspect the weapon and bipod frequently, paying particular attention to all hidden surfaces of the bolt carrier group, forward assist assembly and lower receiver components.

2-4.2.1.2 Perspiration contributes to corrosion because it contains acids and salts. After handling the weapon, clean, wipe dry and oil using LSA or equivalent.

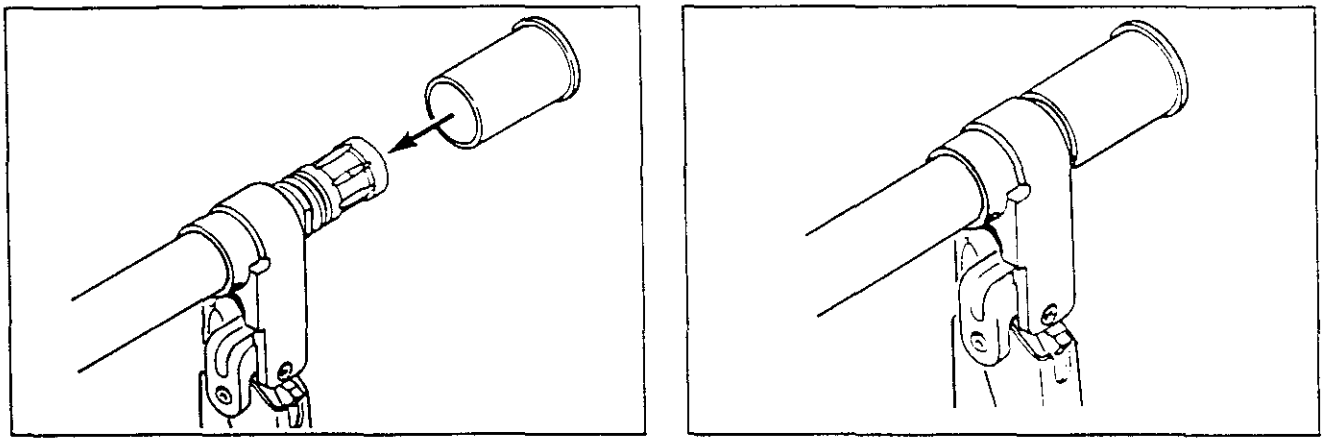
2-4.2.2 Hot, Dry Climates

When operating in hot, dry climates, clean and lightly oil the weapon more frequently, particularly the bore and the sear area of the hammer.

2-4.3 Operating in Dusty and Sandy Areas

While operating in dusty and sandy areas, clean and lighlty lubricate the weapon more frequently. Take care to keep sand out of mechanism when inspecting and lubricating weapon. If necessary, use tarpaulin to shield parts from flying sand and dust during disassembly and assembly. Clean and lightly lubricate after operating the weapon. Cover compensator with protective cap (see Figure 2-14) and keep ejection port door closed.

FIGURE 2-14 PROTECTIVE CAP



1. INSTALLING PROTECTIVE CAP
2. PROTECTIVE CAP INSTALLED

2-4.3.1 Protective Cap Features

2-4.3.1.1 The cap should be removed before firing the weapon. However, the cap is designed so that a bullet will pass through the end without affecting accuracy and without causing a safety hazard to the user.

2-4.3.1.2 Do not place the cap on a hot muzzle. The plastic will become soft and form into the grooves of the compensator making the cap ineffective and difficult to remove.

2-4.4 Operations Under Hot, Rainy or Very Humid Conditions and in Salt Water Areas

2-4.4.1 Inspect the weapon more frequently when operating in hot, moist areas.

2-4.4.2 When the weapon is in use, clean and lubricate the bore and chamber and exposed metal surfaces more frequently than prescribed for normal services. Put a **very thin** film of oil on the chamber and bore and also on the sear surface of the hammer.

2-4.4.3 A moist or salty atmosphere has a tendency to mix with oil and grease and destroy their rust preventive qualities. Inspect all parts frequently for rust or corrosion.

2-4.4.4 When the weapon is not in use, cover all metal surfaces with a film of LSA oil or equivalent.

SECTION 5 - FUNCTIONAL CHECK

2-5 General

A complete functional check of the M16A2 LMG weapon consists of checking its operation with the fire control selector in the SAFE and FIRE positions. The following is a rapid, complete check. Any portion of the check may be used separately to determine the operational condition of any particular function. The functional check should always be done after cleaning and assembling the weapon.

Step	Action	Reference
2-5.1	Remove magazine and clear chamber to ensure LMG is not loaded.	Figure 2-11, Page 15
	Checking Safety	
2-5.2	Pull charging handle to rear and push it forward again to the stowed position.	
2-5.3	Set fire control selector on SAFE.	Figure 2-11, Step 3, Page 15
2-5.4	Pull trigger. You should hear nothing as bolt carrier should not go forward. Release trigger.	
	Checking Full Automatic Function	
2-5.5	Set fire control lever to FIRE.	Figure 2-9, Page 12
2-5.6	Pull charging handle to rear and push it forward again to the stowed position.	Figure 2-9, Page 12
2-5.7	Pull trigger. You should hear a loud noise as bolt/bolt carrier fly forward. Keep trigger pulled.	
2-5.8	Keep trigger pulled, pull charging handle fully back and slowly ease it and the carrier assembly fully forward. A loud click should be heard at the end of its travel as the hammer falls.	
2-5.9	Release trigger - no click should be heard.	
2-5.10	Pull trigger - no click should be heard.	
2-5.11	Release trigger.	

Checking Magazine Catch and Bolt Catch

2-5.12 Install an empty magazine and check that it is locked in place by the magazine catch.

2-5.13 With empty magazine installed, set fire control selector on FIRE.

2-5.14 Pull charging handle fully back and then push it forward into latched position. Bolt carrier assembly should be held to the rear by the bolt catch. Figure 2-9, Page 12

2-5.15 KEEP FINGERS CLEAR OF EJECTION PORT. Push top of bolt catch to release bolt carrier assembly which will click into engagement with the hammer sear. Pull trigger and carrier assembly will slam forward into the locked position. Figure 2-9, Page 12

2-5.16 Set fire control selector on SAFE. Figure 2-7, Page 11

2-5.17 Close ejection port cover. Figure 1-2, Page 4

2-5.18 Install protective cap as required. Figure 2-14, Page 23

Checking Bipod

2-5.19 Move bipod from stowed to extended position and ensure it locks securely in both positions. Figure 2-9, Page 12

2-5.20 Fully extend both legs and ensure they move freely and lock securely.

2-5.21 Retract and stow bipod legs.

SECTION 6 - PRE-ISSUE SERVICE

2-6 General

CAUTION: ENSURE CHAMBER IS EMPTY BEFORE STARTING MAINTENANCE PROCEDURES.

To determine whether the weapon and other basic issue items have been properly prepared for service by the supplying organization, and to be sure they are in functional condition, the following service is recommended.

2-6.1 Pre-Issue Check List

Step	Action	Reference
2-6.1.1	Check to determine that all basic issue items have been furnished.	
2-6.1.2	Clear weapon.	Figure 2-11, Page 15
2-6.1.3	Open receivers.	Figure 3-1, Steps 1 & 2, Page 31
2-6.1.4	Remove bolt carrier assembly from weapon.	Figure 3-2, Page 32
2-6.1.5	Visually inspect bolt carrier assembly for proper assembly, damaged or missing parts.	
2-6.1.6	Clean and lubricate.	Chapter III, Section 2, Page 30

NOTE: Wipe excess oil from barrel bore and chamber. Particular attention should be given to cleaning the bolt carrier key and care should be taken to avoid damaging or bending it.

2-6.1.7	Check for free movement between bolt carrier key and gas tube as follows: Remove bolt from bolt carrier, install bolt carrier (without bolt) in upper receiver and push it fully forward. Holding hand over rear of upper receiver, point muzzle vertically upward. Bolt carrier should fall back out of the upper receiver. If it does not, bolt carrier key and gas tube may be dirty, misaligned, or damaged. Clean, repair or replace them as necessary.	

Step	Action	Reference
2-6.1.8	Reassemble the bolt to the bolt carrier and reassemble the weapon.	
2-6.1.9	Assure proper operation of weapon by carrying out a Functional Check.	Section 5, Page 24

SECTION 7 - PRE-FUNCTIONING LUBRICATION

2-7 General

CAUTION: ENSURE CHAMBER IS EMPTY BEFORE STARTING MAINTENANCE PROCEDURES.

The following lubrication procedure should be performed before the weapon is used. Semi-fluid Lubricating Oil (LSA), MIL-L-46000 or equivalent is recommended.

2-7.1 Application Areas

Step	Action	Reference
2-7.1.1	Coat all components of the lower receiver and the bolt carrier group with a light coating of LSA oil or equivalent using a lightly oiled cotton wiping cloth, cleaning swabs and pipe cleaners or something similar.	
2-7.1.2	Apply a drop of LSA oil or equivalent in the mouth of the bolt carrier key.	Figure 3-12.8, Page 42
2-7.1.3	Apply a drop of LSA oil or equivalent in each of the bolt carrier exhaust ports. Move bolt back and forth in the carrier until the oil runs inside the carrier.	Figure 3-12.9, Page 42
2-7.1.4	Apply a drop of LSA oil or equivalent to each detent of the front and rear sights and takedown and pivot pins.	Figure 3-12.1, Page 41 Figures 3-12.10, Page42
2-7.1.5	Apply a drop of LSA oil or equivalent to the sear surface of the hammer.	Figure 3-12.1, Page 41
2-7.1.6	Coat surfaces of bipod with LSA oil or equivalent using a lightly oiled cotton wiping cloth and apply to springs.	Figure 3-12.11, Page 42

CHAPTER III - OPERATOR AND UNIT MAINTENANCE INSTRUCTIONS

SECTION 1 - TOOLS AND MATERIALS REQUIRED FOR MAINTENANCE

3-1.1 Operator Maintenance Tools and Materials

The tools and materials needed by the operator to perform the required maintenance functions are as follows:

Item No.	Description	Page No.
1	Brush, Cleaning, Bore (p/n 94144)	72
2	Brush, Cleaning, Chamber (p/n 94145)	72
3	Cleaner, Tobacco Pipe (or something similar)	
4	Cleaning Compound, Rifle Bore: Small Arms bore cleaner (U.S. Fed Spec P-C-111 or equivalent)	
5	Lubricating Oil, Semi-Fluid (LSA) (MIL-L-4600)	
6	Lubricating Oil, Automatic Weapons (LAW) (MIL-L-14107) (for operation in extreme cold only)	
7	Cleaning Compound, Solvent (MIL-C-372)	
8	Rag, Wiping, Cotton	
9	Rod, Cleaning, Small Arms (p/n 62684)	72
10	Swab, Small Arms Cleaning	

NOTE: The weapon is compatible with and will function properly using any good grade of oil and bore cleaner. The above formulations are recommended only because it is believed they are the best for all firearms, but equivalent materials would be acceptable.

Combination cleaner/lubricants, while more convenient to use than LSA, may require more frequent applications. Use them only under normal conditions.

For maximum reliability of the weapon under heavy firing schedules or under adverse conditions, lubricate with LSA or equivalent.

3-1.2 Unit Maintenance Tools and Materials

The tools and equipment for the unit armorer to perform his maintenance functions are as follows:

Item No.	Description	Page No.
1	Tools and Materials: Listed in Paragraph 3-1.1	28
2	Brush, artists: Metal ferrule, flat chisel edge, 7/16" width, 1 1/8" length, exposed bristle	
3	Brush, Cleaning, Tools and Parts	
4	Cloth, Abrasive: crocus, ferric oxide and quartz	
5	Lacquer: black (jet) lusterless acrylic nitrocellulose type (touch up) (Spec, Fed, TT-L-50 or MIL-L-19538, Color 37038) or equivalent	
6	Penetrating Oil: (Spec, Fed, VV-P-216) or equivalent	
7	Wrench, Front Sight Adjusting, PN 64882 (Square Post)	47
8	Detent Depressor - PN 62672	47
9	Punch, Pin drive 1/16" diameter, PN 94152	
10	Screwdriver, Hand, Flat Blade, Mechanics, PN 94157	
11	Hammer, Ball, Pein, Mechanics 8 oz.	

SECTION 2 - OPERATOR MAINTENANCE PROCEDURES, USUAL CONDITIONS

3-2 General

CAUTION: ENSURE CHAMBER IS EMPTY BEFORE STARTING MAINTENANCE PROCEDURES.

This section describes maintenance procedures to be performed by the operator under **usual** conditions. Usual conditions are defined as conditions of moderate temperature and humidity. For additional maintenance procedures to be performed by the operator under unusual conditions, refer to Chapter II, Section 4, Page 22.

3-2.1 Disassembly (Field Stripping)

The extent of disassembly required for the performance of maintenance by the operator is as follows:

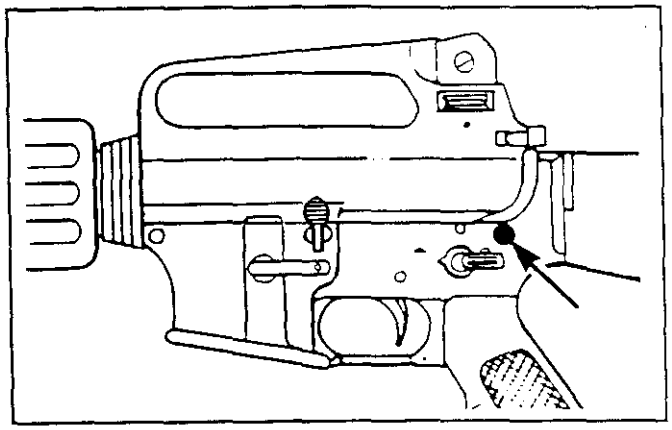
Step	Action	Reference
3-2.1.1	Clear weapon.	Figure 2-11, Page 15
3-2.1.2	Remove sling.	Operator's Manual
3-2.1.3	Separate receivers.	Figure 3-1, Page 31
3-2.1.4	Remove bolt carrier assembly and charging handle.	Figure 3-2, Page 32
3-2.1.5	Disassemble bolt carrier assembly but do **NOT** disassemble ejector.	Figure 3-3, Page 32
3-2.1.6	Remove handguards.	Figure 3-4, Page 34
3-2.1.7	Remove buttstock buffer assembly and action spring but do **NOT** disassemble buffer assembly.	Figure 3-5, Page 35
3-2.1.8	Disassemble magazine.	Figure 3-6, Page 36

3-2.2 Cleaning

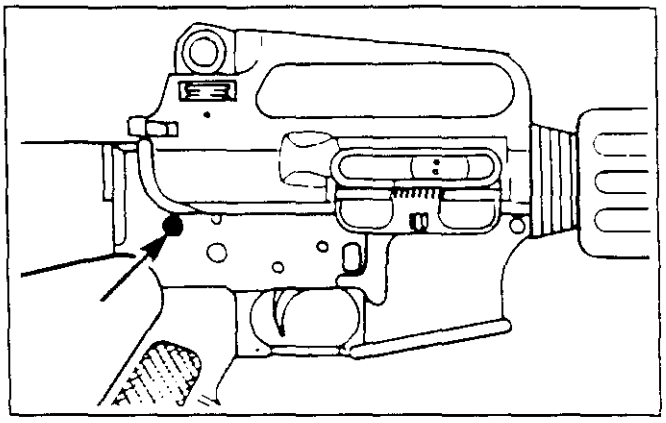
After the weapon has been field stripped, clean it as follows:

3-2.2.1 Attach the small bore cleaning brush to the cleaning rod and insert it in the bolt carrier key. Rotate brush clockwise to remove carbon and powder residue. Do **NOT** use any cleaning compound on the brush when cleaning out the key. (See Figure 3-9, Page 38.)

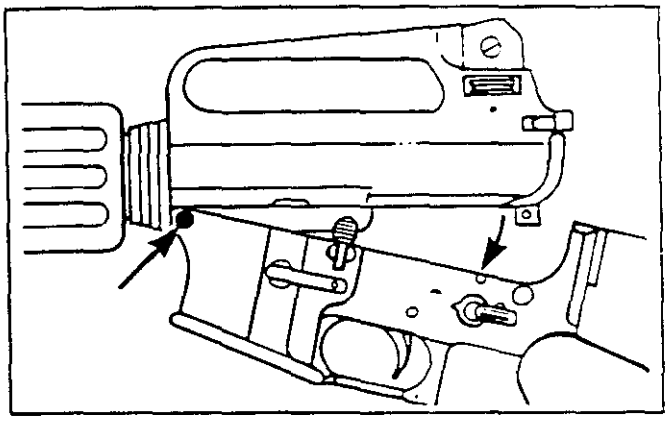
FIGURE 3-1 RECEIVER SEPARATION PROCEDURE



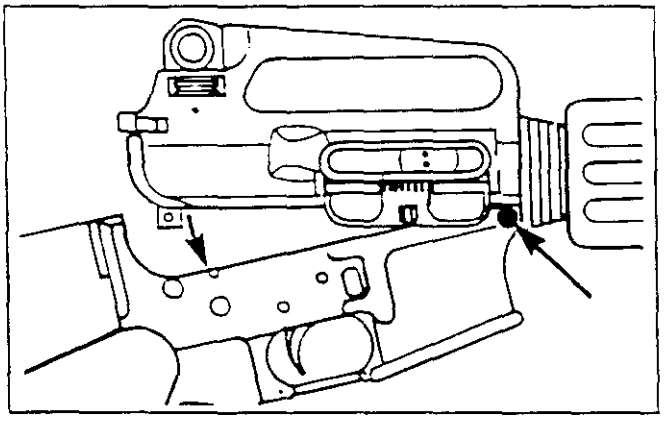
STEP 1 PUSH TAKEDOWN PIN TO START



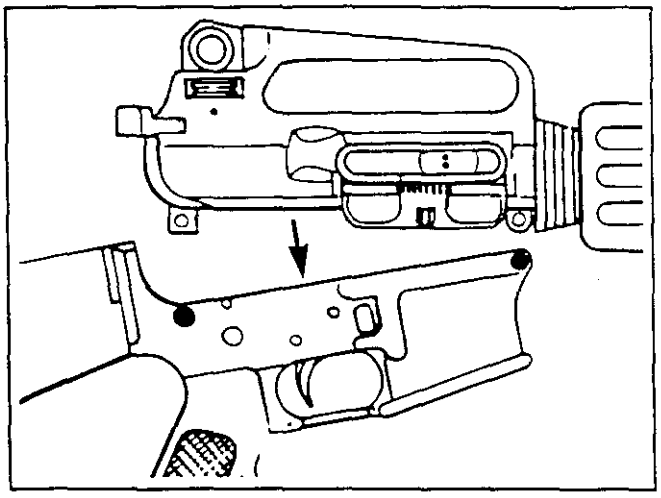
STEP 2 PULL TAKEDOWN PIN OUT TO DETENT



STEP 3 PUSH PIVOT PIN TO START

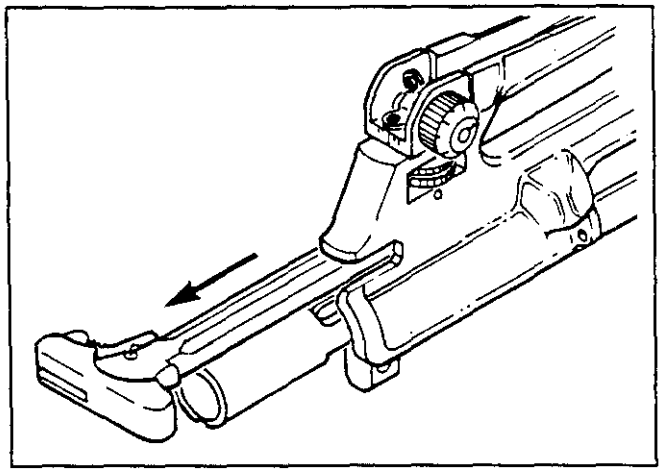


STEP 4 PULL PIVOT PIN OUT TO DETENT

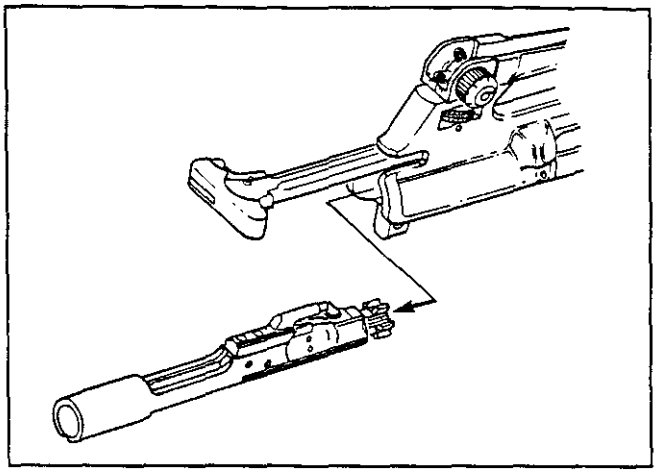


STEP 5 RECEIVERS SEPARATED

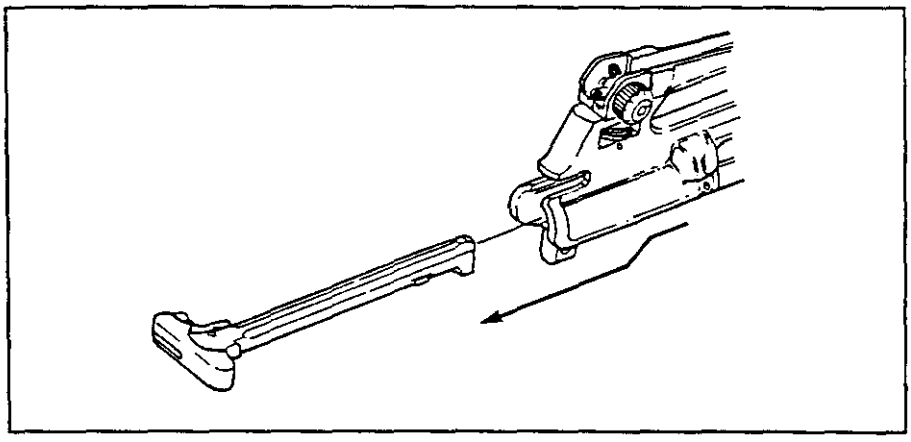
FIGURE 3-2 BOLT CARRIER ASSEMBLY AND CHARGING HANDLE REMOVAL



STEP 1 PULL CHARGING HANDLE TO REAR

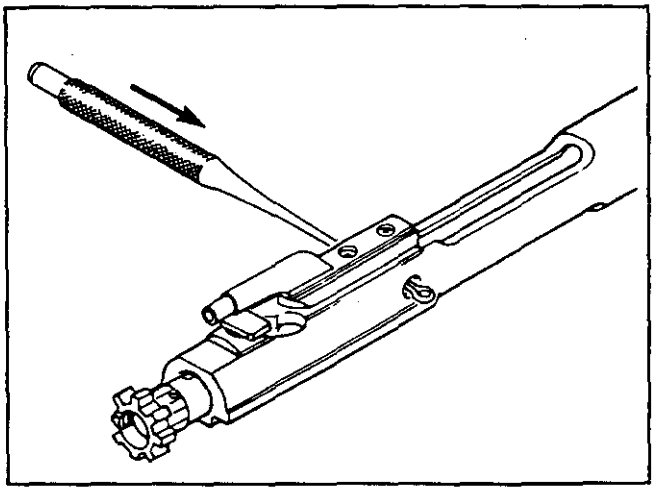


STEP 2 REMOVE BOLT CARRIER ASSEMBLY

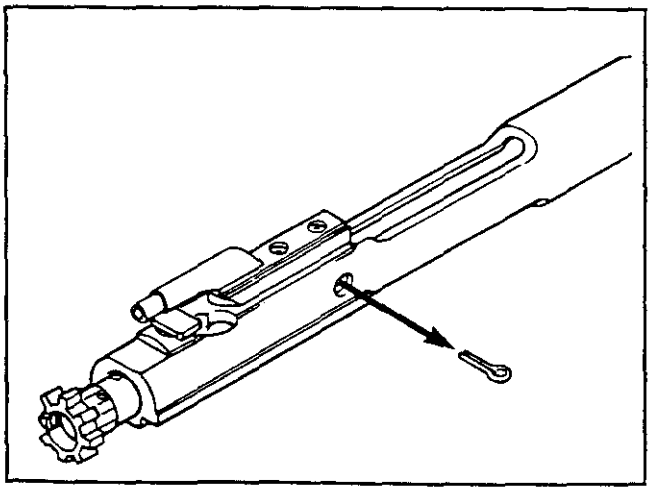


STEP 3 REMOVE CHARGING HANDLE

FIGURE 3-3 BOLT CARRIER DISASSEMBLY

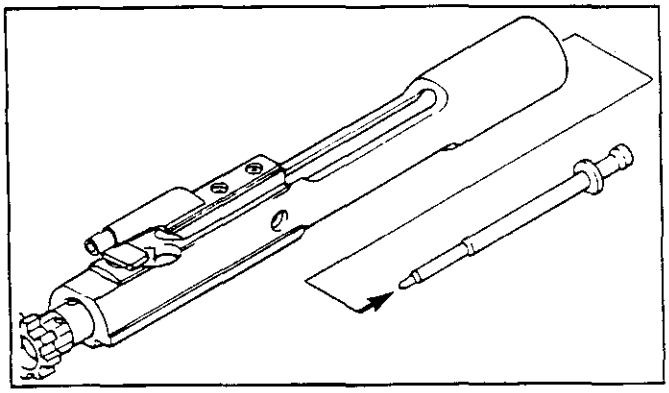


STEP 1 START REMOVAL OF FIRING PIN RETAINING PIN

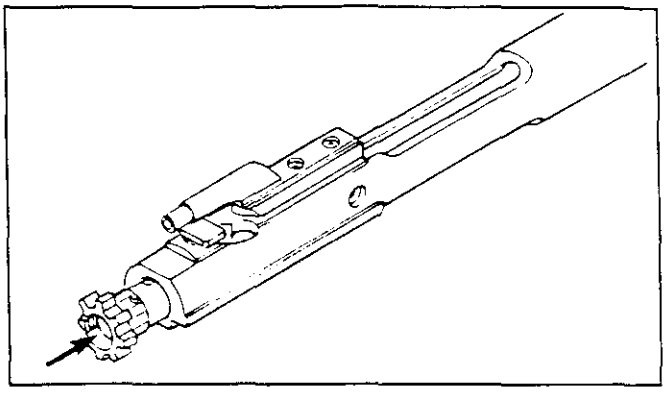


STEP 2 WITHDRAW FIRING PIN RETAINING PIN

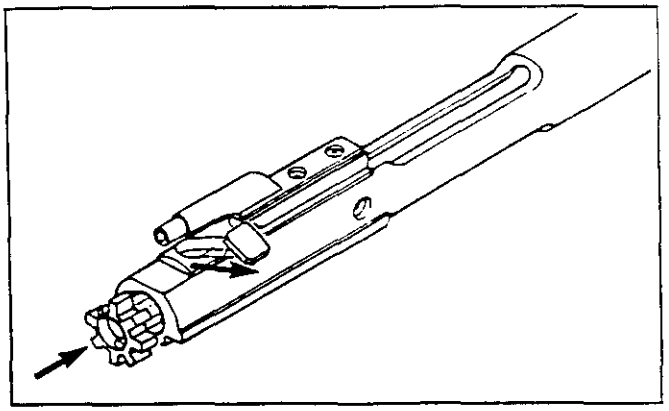
FIGURE 3-3 BOLT CARRIER DISASSEMBLY (CONT)



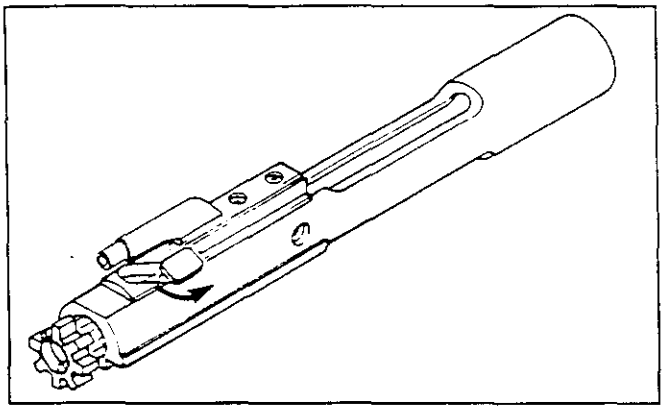
STEP 3 REMOVE FIRING PIN



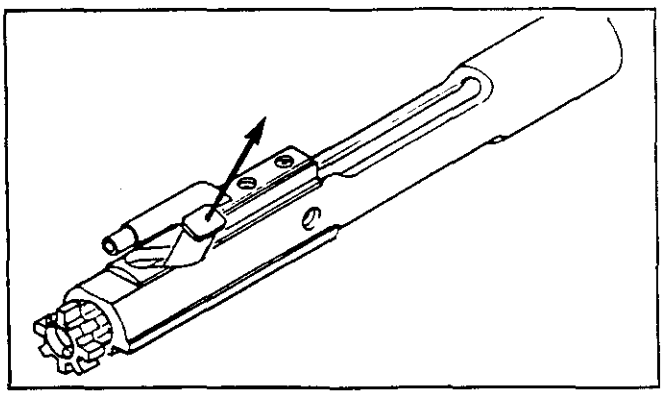
STEP 4 PUSH BOLT TO LOCKED POSITION



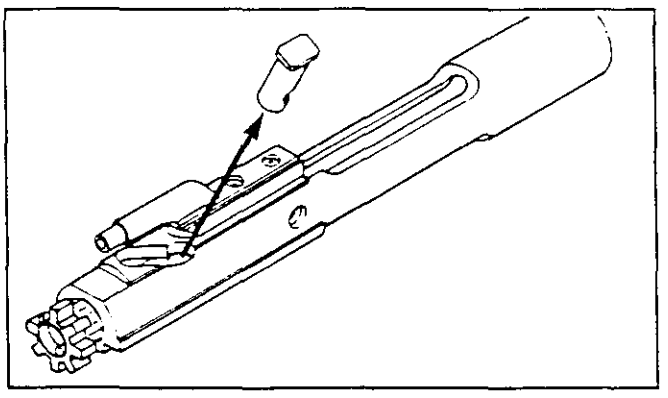
STEP 5. BOLT IN LOCKED POSITION



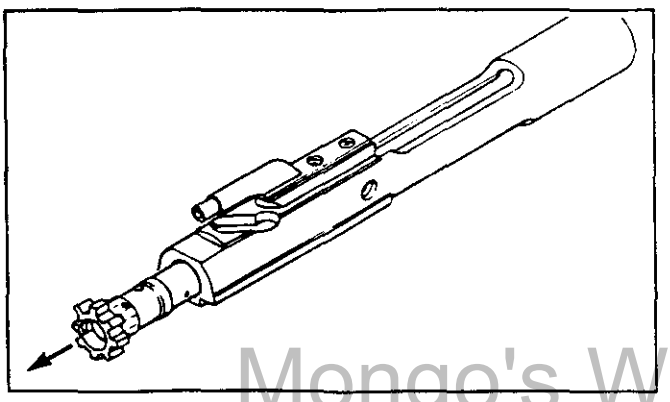
STEP 6 BOLT CAM PIN TURNED 90°



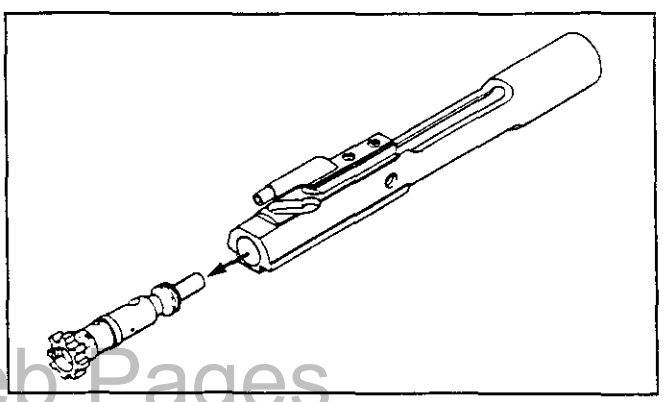
STEP 7 REMOVE CAM PIN



STEP 8 CAM PIN REMOVED

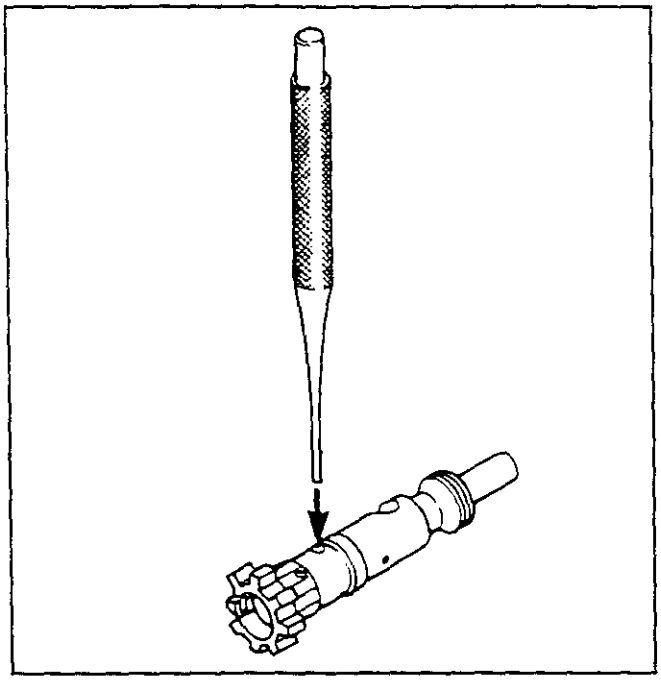


STEP 9 REMOVE BOLT

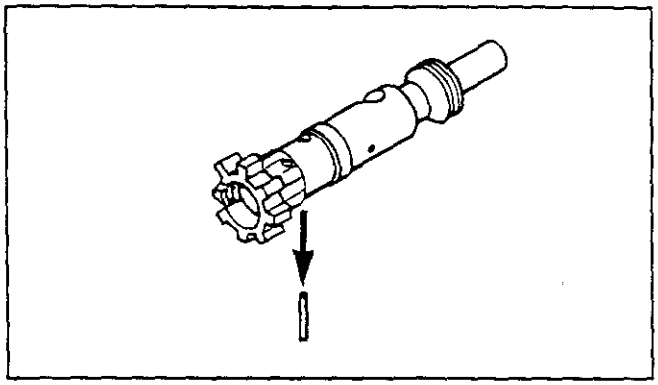


STEP 10 BOLT REMOVED

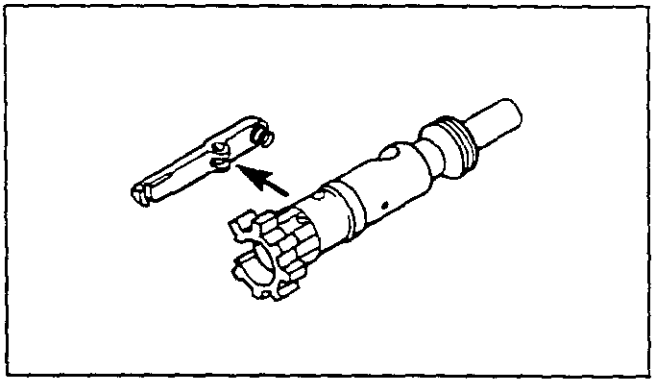
FIGURE 3-3 BOLT CARRIER DISASSEMBLY (CONT)



STEP 11 START REMOVAL OF EXTRACTOR PIN

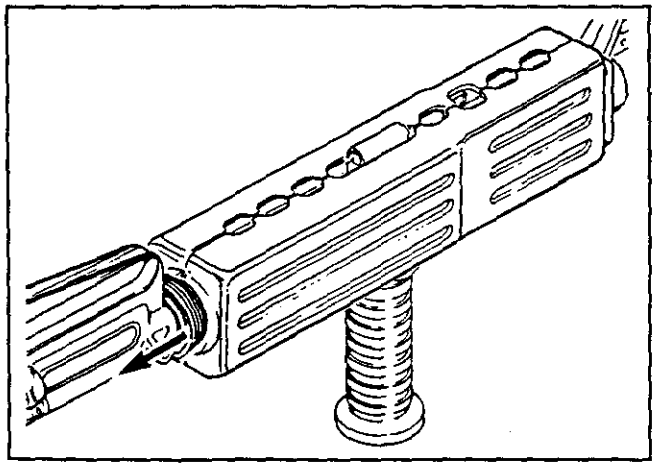


STEP 12 EXTRACTOR PIN REMOVED

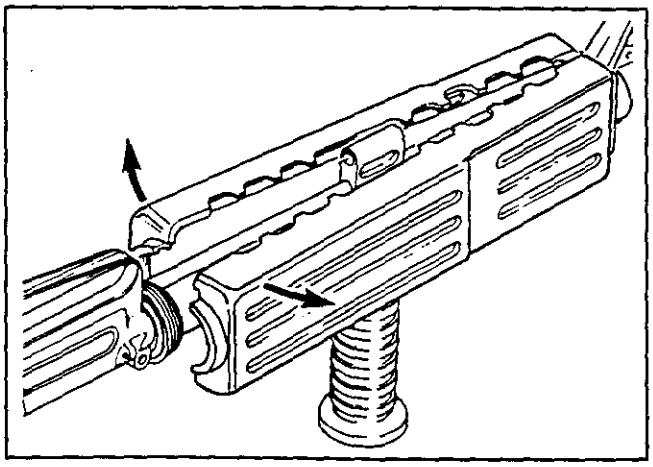


STEP 13. EXTRACTOR REMOVED

FIGURE 3-4 HANDGUARD REMOVAL

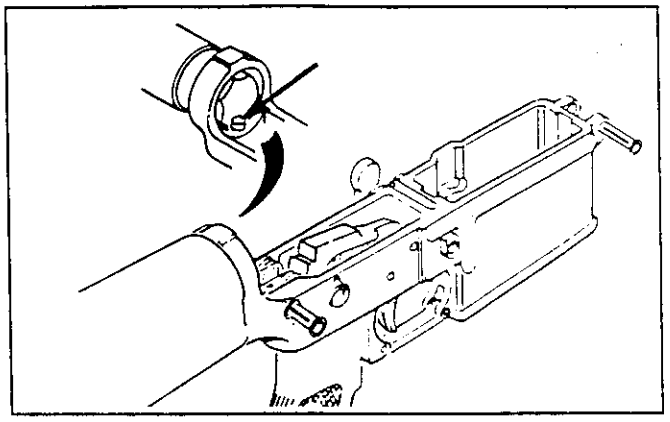


1. PULLING BACK HANDGUARD SLIPRING

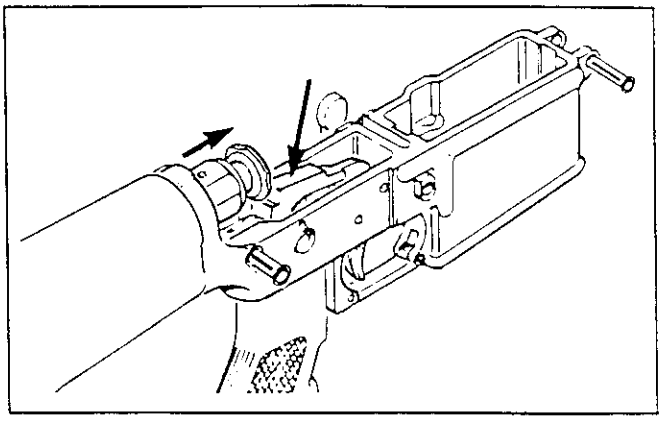


2. HANDGUARDS RELEASED FROM SLIPRING

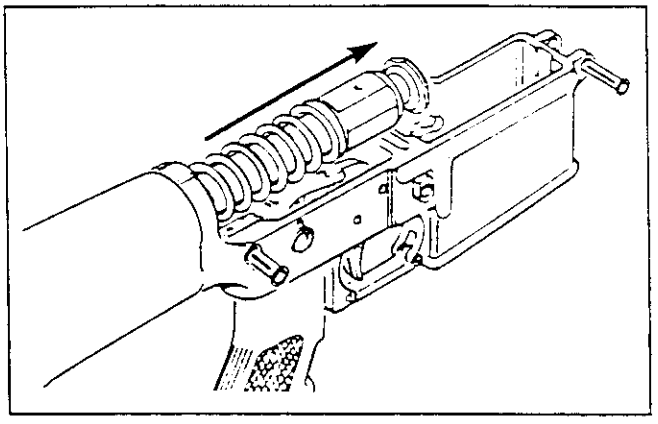
FIGURE 3-5 BUFFER AND ACTION SPRING REMOVAL



1. BUFFER RETAINER DEPRESSED TO START BUFFER REMOVAL



2. HAMMER DEPRESSED TO CONTINUE BUFFER REMOVAL



3. BUFFER AND ACTION SPRING REMOVED (DO NOT DISASSEMBLE BUFFER ASSEMBLY)

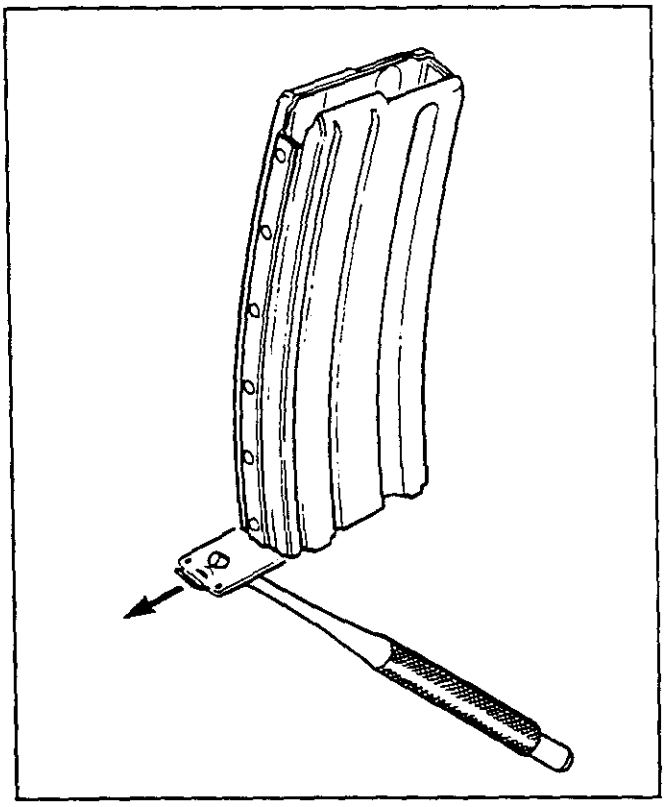
3-2.2.2 Dip the bore cleaning brush in bore cleaning compound and brush the bore from the chamber end of the barrel. Push the brush through the bore until it extends beyond the muzzle before pulling it back. **NEVER** reverse the brush direction while the brush is in the bore. Continue brushing until the bore is well covered with compound (See Figure 3-8, Page 37).

3-2.2.3 Use the bore cleaning brush wet with bore cleaning compound and clean all carbon and powder residue from around the gas tube in the upper receiver (Figure 3-8.2, Page 37), the bolt locking lugs (Figure 3-8.3, Page 37), behind the bolt rings (Figure 3-8.4, Page 37), and inside the bolt carrier from the front (Figure 3-8.7, Page 37), and from the rear (Figure 3-8.8, Page 37). Also **carefully** clean the under lip of the extractor and the sear surface on bottom of the carrier.

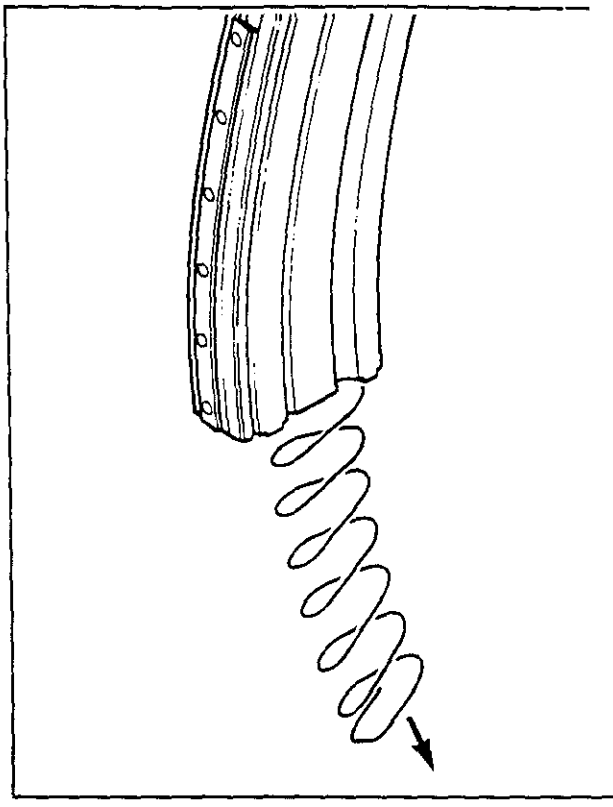
3-2.2.4 Attach the large chamber cleaning brush to the cleaning rod, dip the brush in bore cleaning compound, and clean the chamber. Use a minimum of five plunge strokes and three 360° clockwise rotational strokes (Figure 3-9, Page 38).

IMPORTANT: Do not use a wire brush on aluminum surfaces such as the receivers.

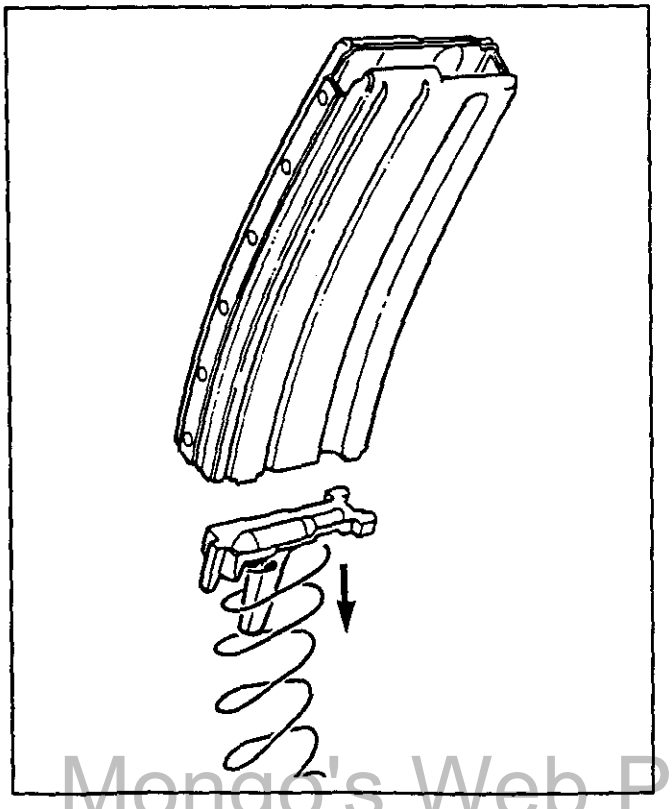
FIGURE 3-6 MAGAZINE DISASSEMBLY



1. BOTTOM PLATE REMOVAL



2. SPRING REMOVAL



3. SPRING AND FOLLOWER REMOVED

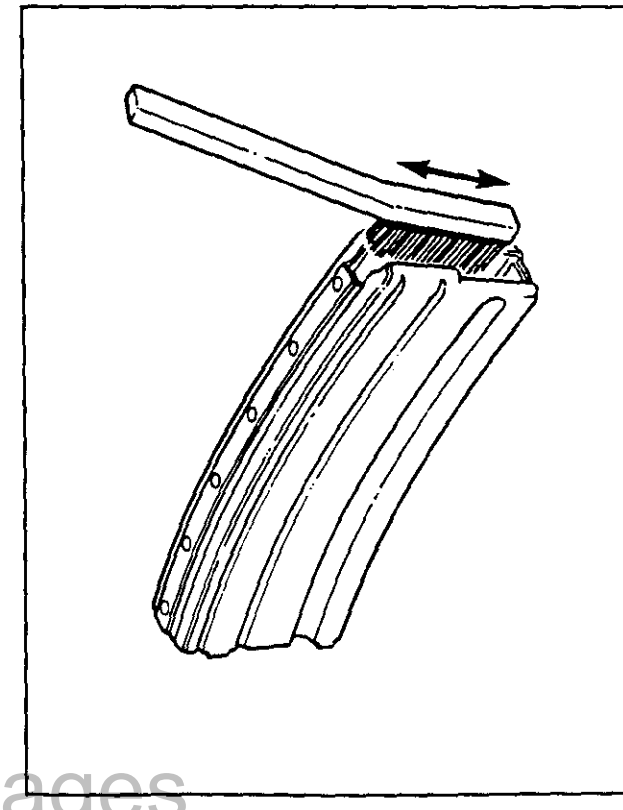
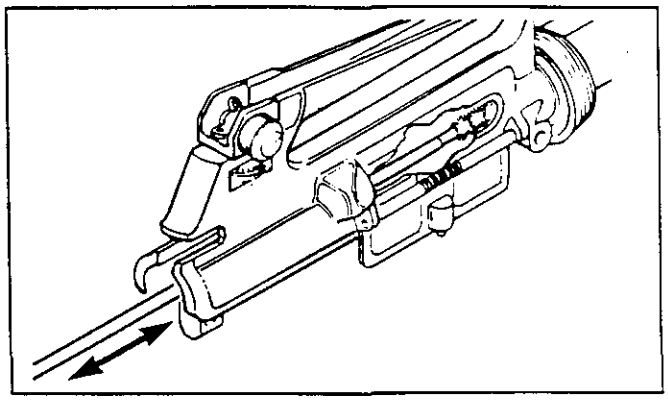
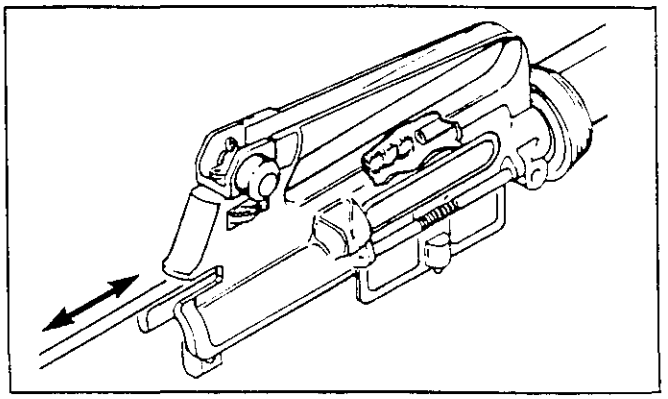


FIGURE 3-7 MAGAZINE BOX CLEANIN

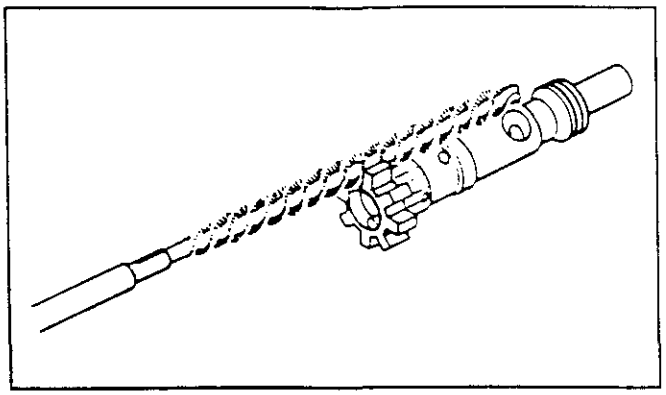
FIGURE 3-8 CLEANING WITH BORE BRUSH



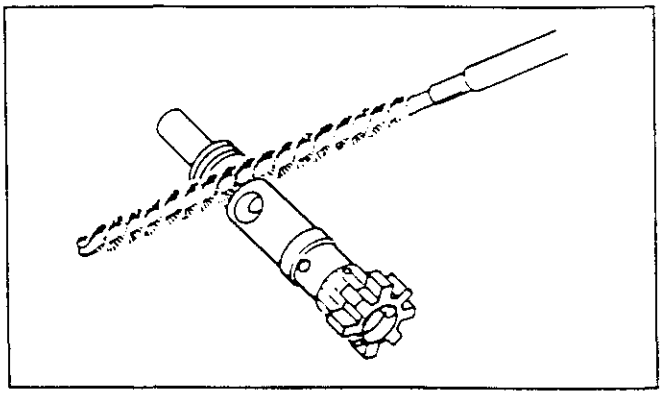
1. THROUGH BARREL



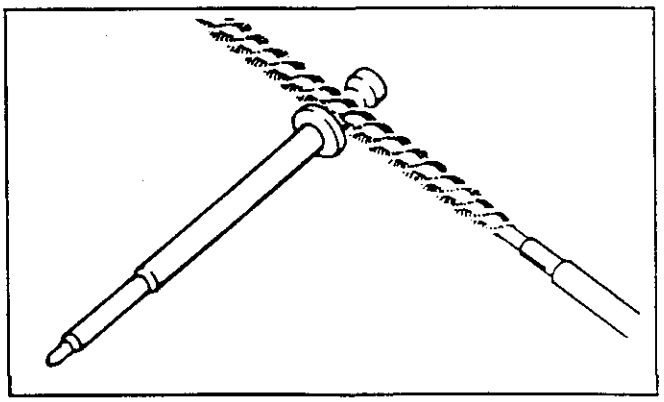
2. UPPER RECEIVER AROUND GAS TUBE



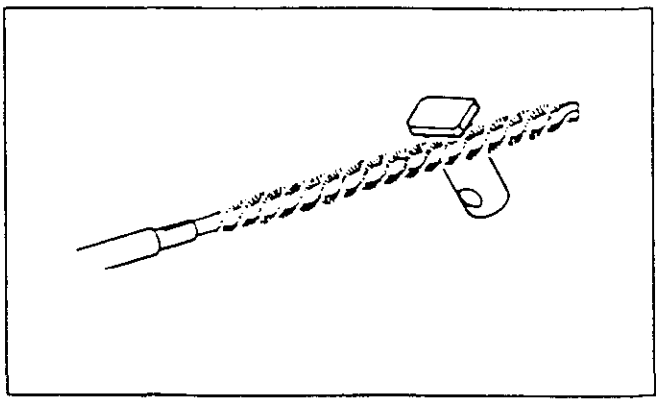
3. BOLT LOCKING LUGS



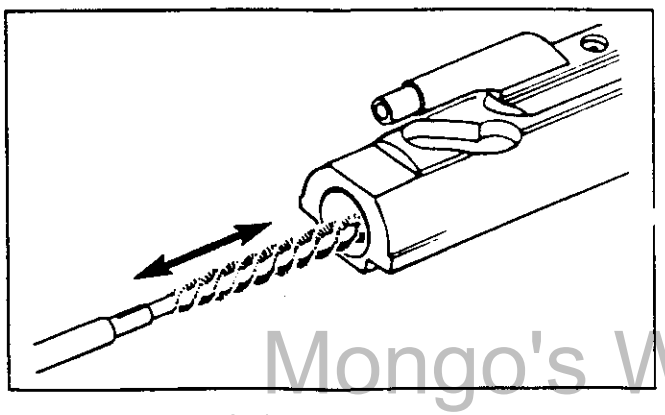
4. REAR OF BOLT



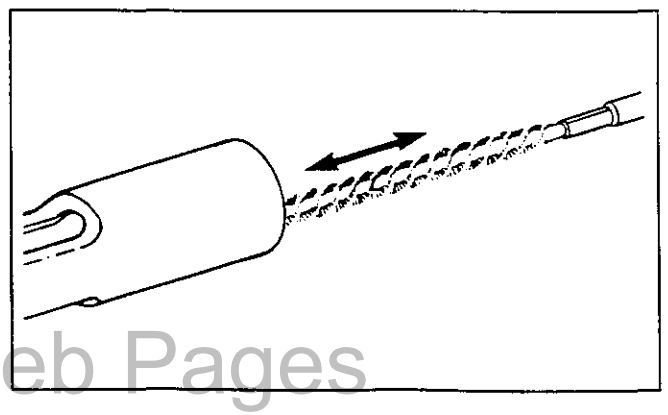
5. FIRING PIN



6. BOLT CAM PIN

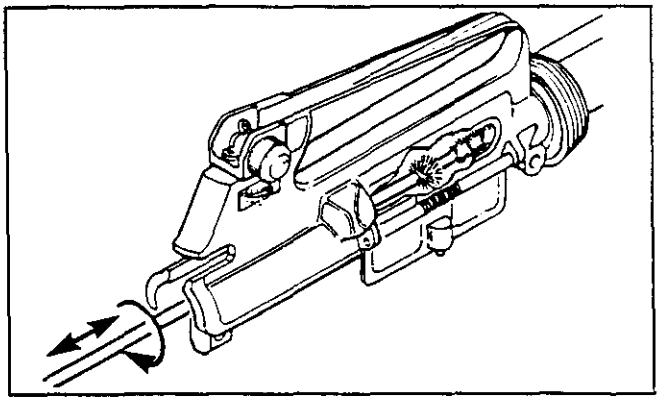


7. INSIDE BOLT CARRIER - FRONT

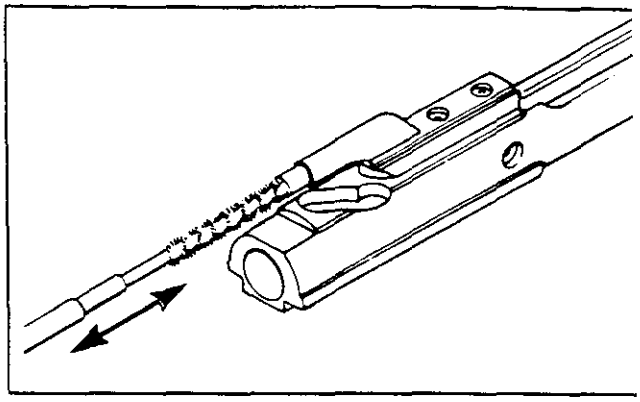


8. INSIDE BOLT CARRIER - REAR

FIGURE 3-9 CLEANING CHAMBER AND KEY

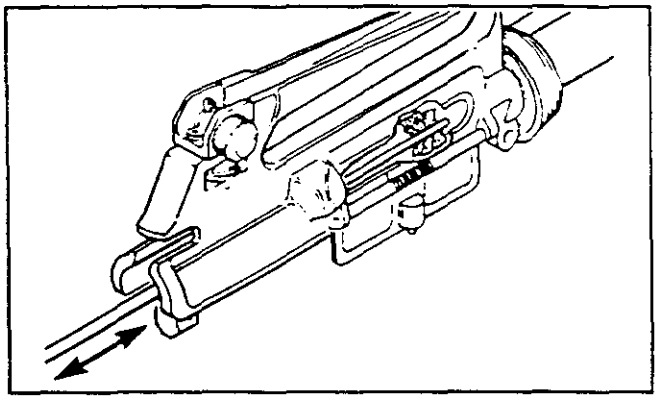


1. CHAMBER

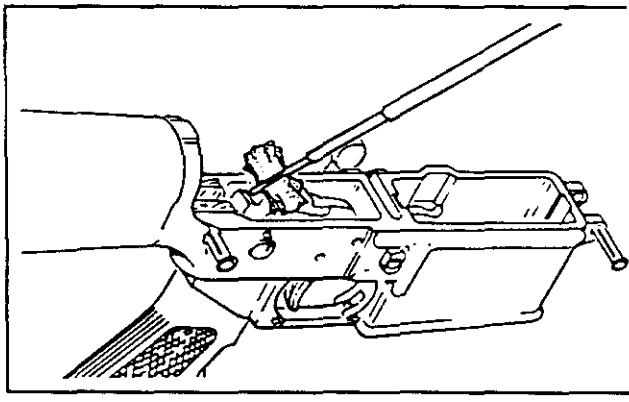


2. KEY

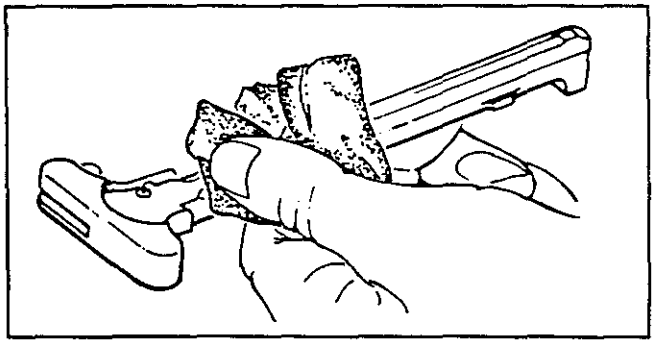
FIGURE 3-10 WIPING PARTS CLEAN AND DRY AND CLEANING BUTTSTOCK DRAIN HOLE



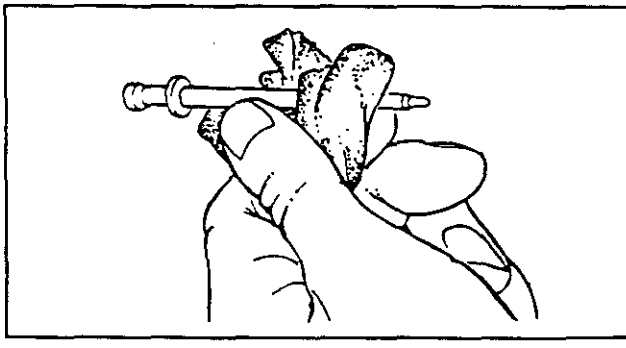
1. WIPING BARREL



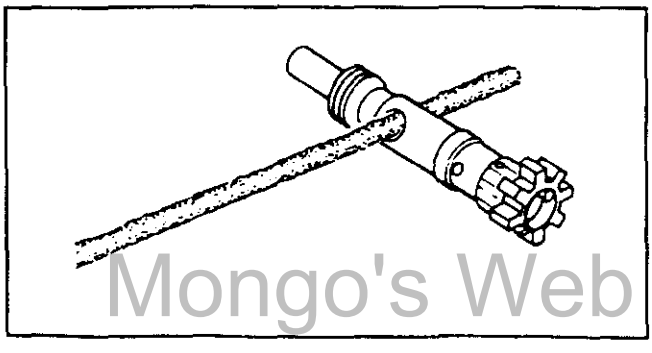
2. WIPING ACTION IN LOWER RECEIVER



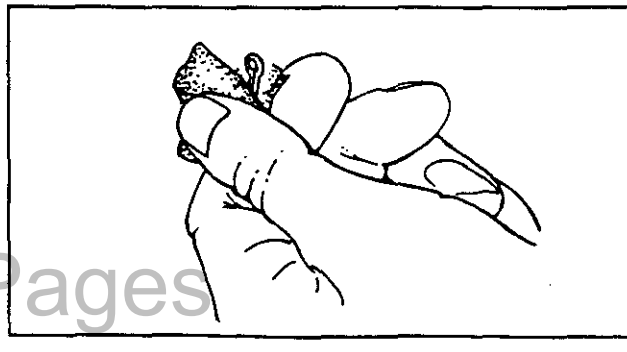
3. WIPING CHARGING HANDLE



4. WIPING FIRING PIN

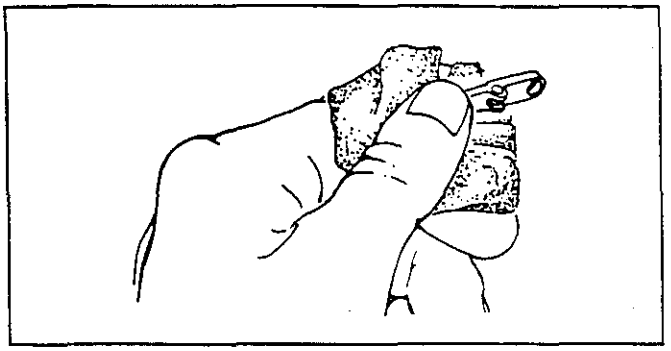


5.WIPING INSIDE CAM PIN HOLE

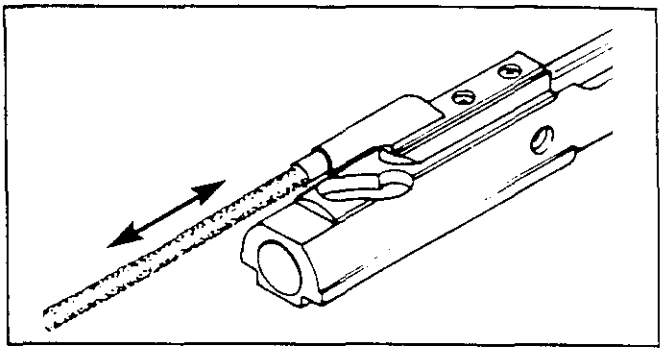


6.WIPING FIRING PIN RETAINING PIN

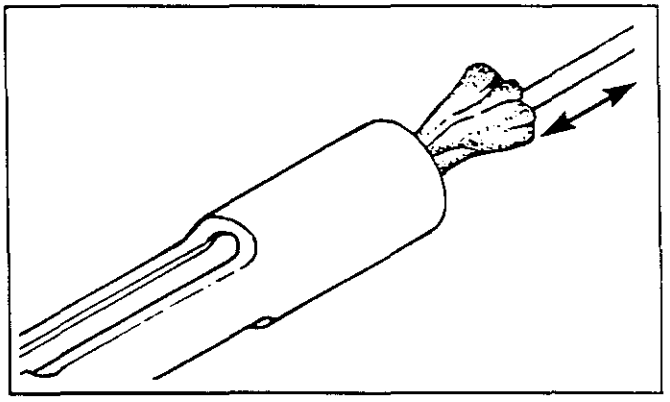
FIGURE 3-10 WIPING PARTS CLEAN AND DRY (CONT)



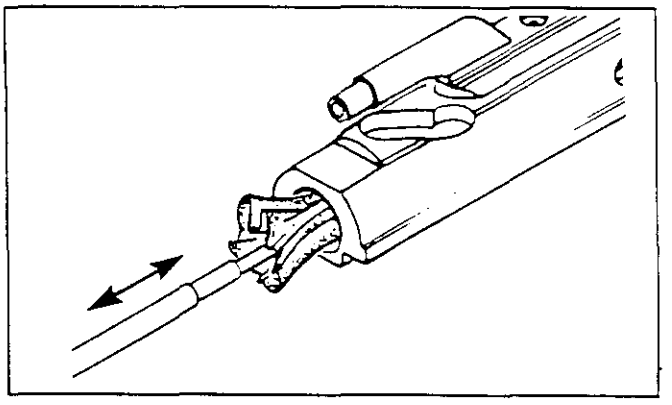
7. WIPING EXTRACTOR



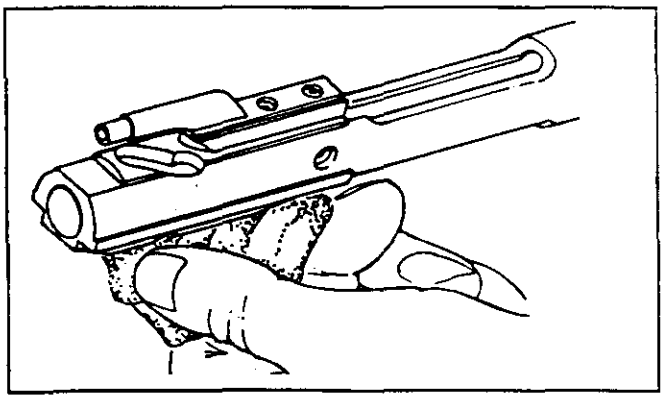
8. WIPING BOLT CARRIER KEY



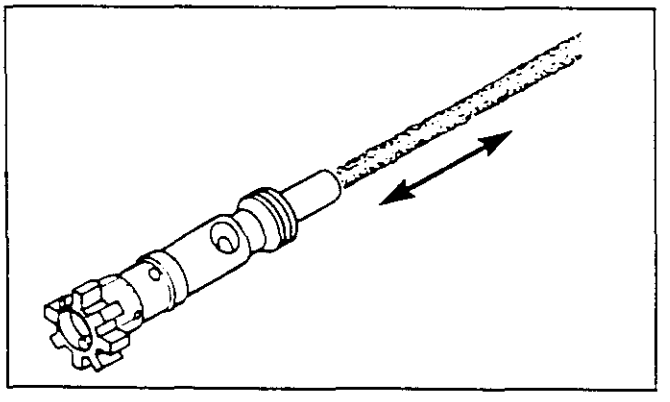
9. WIPING INSIDE BOLT CARRIER - REAR



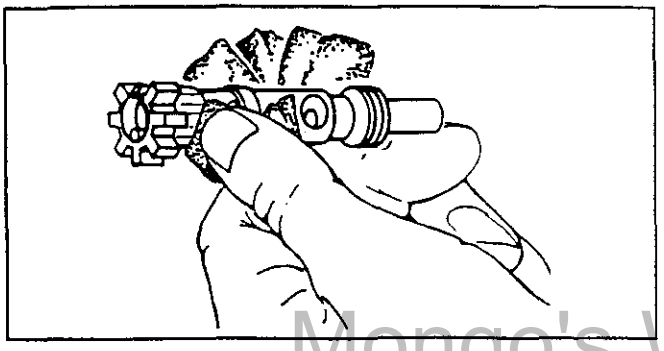
10. WIPING INSIDE BOLT CARRIER - FRONT



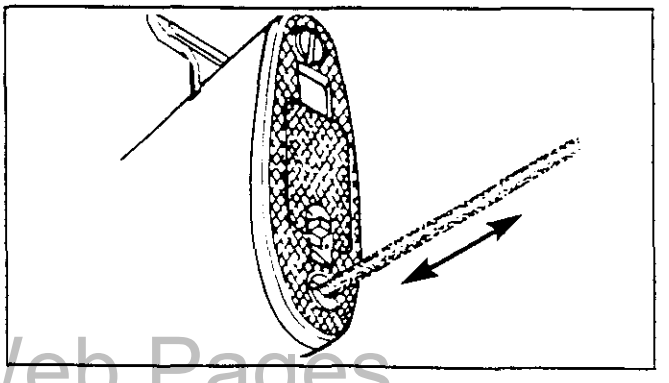
11. WIPING SEAR SURFACE ON BOTTOM OF BOLT CARRIER



12. WIPING OUTSIDE BOLT



13. WIPING OUTSIDE BOLT



14. CLEAN DRAIN HOLE IN BASE OF BUTTSTOCK

3-2.2.5 Using a fiber or nylon brush and dry cleaning solvent, clean the remaining parts of weapon and magazine. (Figure 3-7, Page 36.)

WARNING: MOST CLEANING CHEMICALS ARE TOXIC AND MAY BE VERY HARMFUL IF THEIR VAPORS ARE INHALED FOR EXTENDED PERIODS. THEREFORE, THESE CHEMICALS SHOULD ALWAYS BE USED SPARINGLY AND ONLY IN A WELL VENTILATED AREA.

3-2.2.6 Wipe all parts of the weapon clean and dry with clean, dry cotton wiping rags, pipe cleaners and cleaning swabs; especially those areas shown in Figure 3-10, Pages 38 and 39. When wiping out the barrel bore, use a new swab inserted in the cleaning rod swab holder for each pass through the barrel. Continue this process until a swab comes out of the barrel clean and dry.

3-2.2.7 Clean out drain hole in buttcap screw using a pipe cleaner or something similar. (See Figure 3-10, Page 39.)

NOTE: If more thorough cleaning is necessary, see Paragraph 3-7.4, Page 63, for more detailed breakdown of buttstock assembly.

3-2.3 Inspection

After cleaning, inspect all parts for excessive wear, corrosion, or mechanical damage. If any of these faults are discovered, the weapon should be turned in for repair. Also inspect magazine components for cracks, distortion, or excess wear. If any of these conditions are found, the magazine should be replaced.

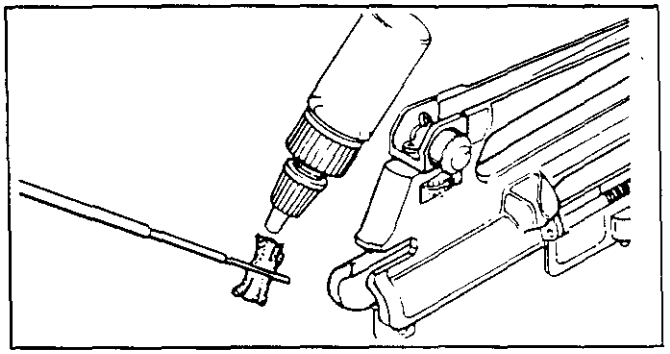
3-2.4 Lubrication

After the parts have been cleaned and inspected, all metal parts should be wiped with a cotton wiping cloth or cleaning swabs which have been lightly oiled with LSA or equivalent lubricant. A lightly oiled swab installed in the cleaning rod swab holder should be run through the barrel bore once. (See Figure 3-11, Page 41.)

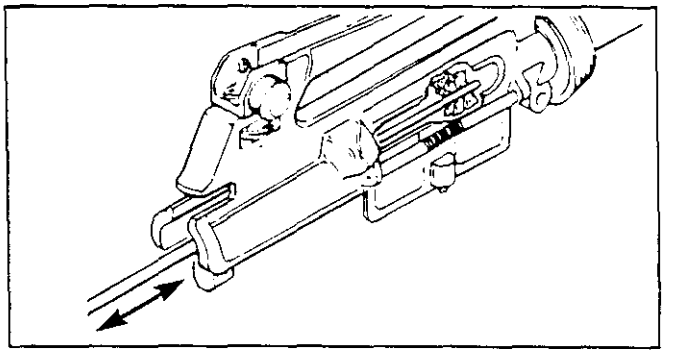
IMPORTANT: The chamber should be lubricated, but it is important that only a thin film of lubricant be applied. Then apply one drop of LSA or equivalent lubricant to each of the places shown in Figure 3-12, Pages 41 and 42. An exception to the above is the magazine. The only part which is to be wipe-oiled is the magazine spring.

NOTE: See special instructions on Page 22 when weapon is operating in extreme cold or extreme heat.

FIGURE 3-11 INTERNAL LUBRICATION OF BARREL BORE

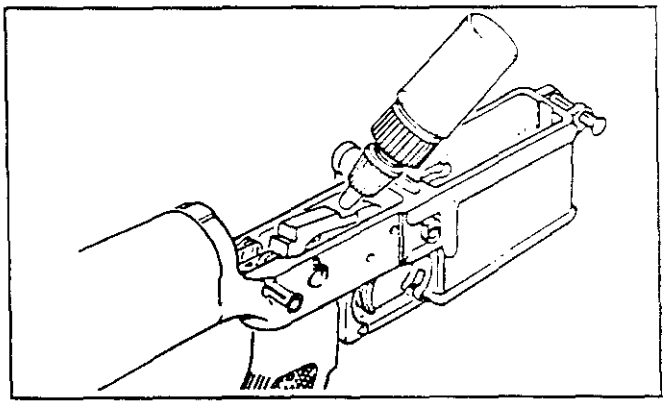


1. APPLYING OIL TO CLEANING SWAB

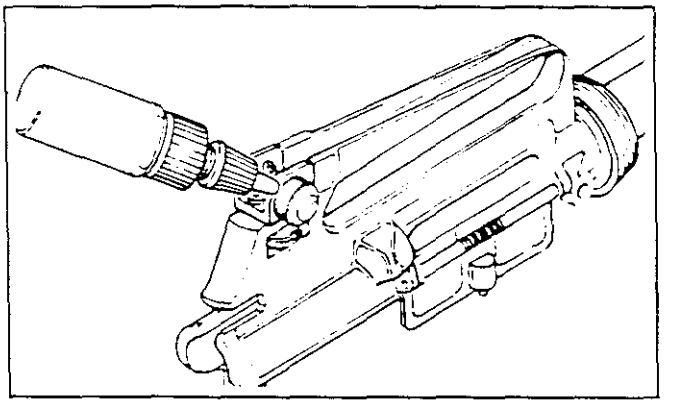


2. LUBRICATING BARREL BORE

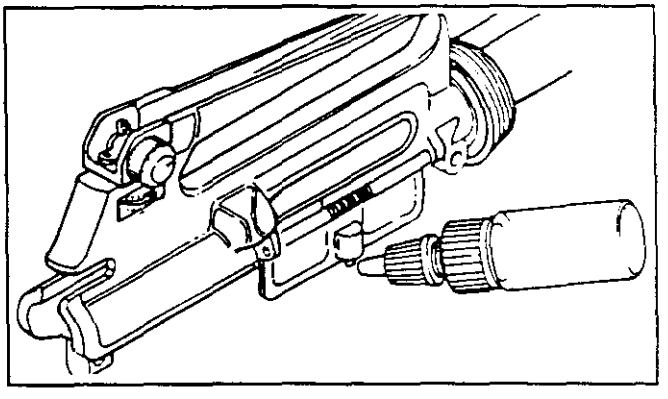
FIGURE 3-12 APPLICATION OF LSA LUBRICANT (OR EQUIVALENT)



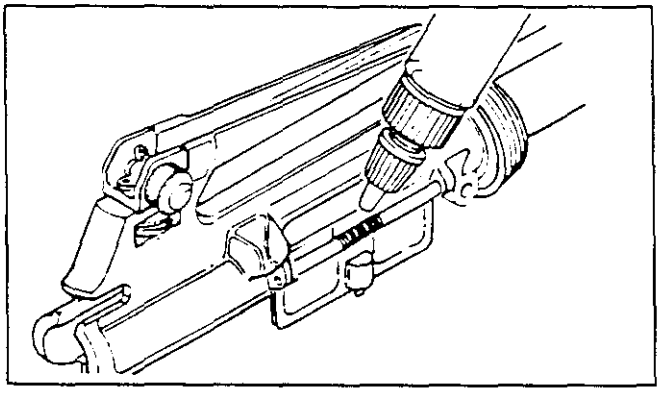
1. HAMMER SEAR SURFACE, ACTION SPRINGS, PINS, DETENTS, AND FRONT AND REAR TAKEDOWN PINS



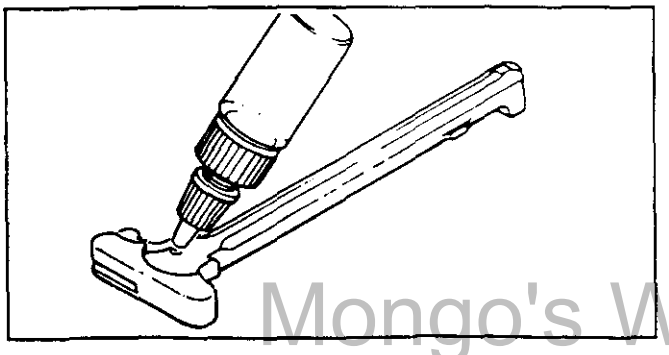
2. REAR SIGHT DETENTS AND SHAFT



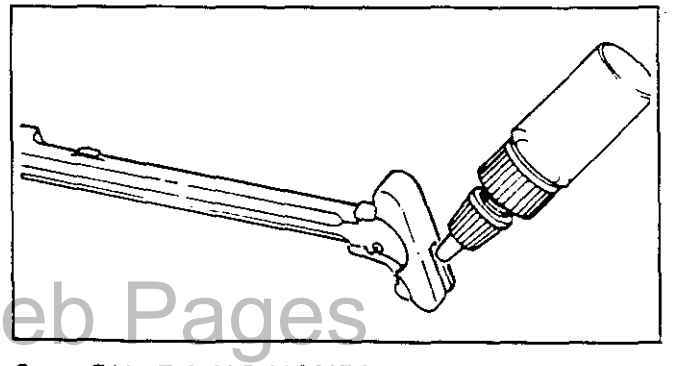
3. EJECTION PORT COVER LATCH



4. EJECTION PORT COVER SPRING

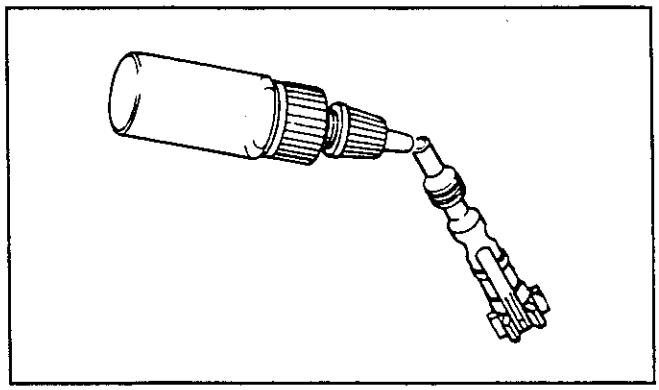


5. CHARGING HANDLE CATCH

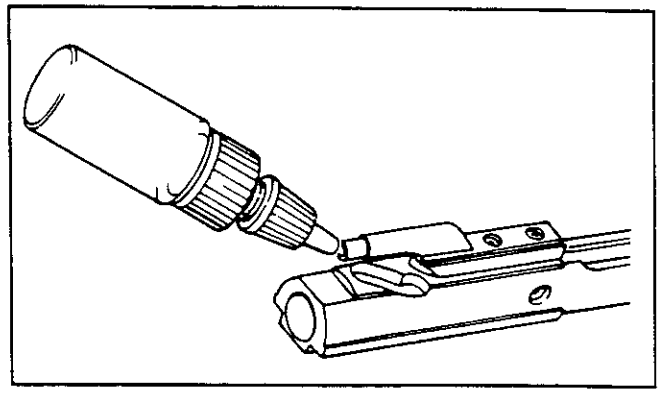


6. CHARGING HANDLE CATCH SPRING

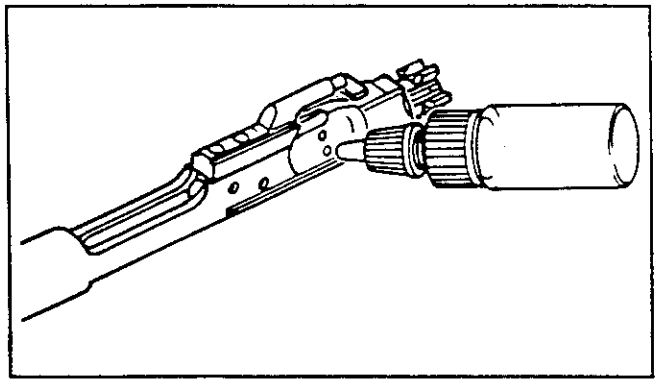
FIGURE 3-12 APPLICATION OF LSA LUBRICANT (OR EQUIVALENT) (CONT)



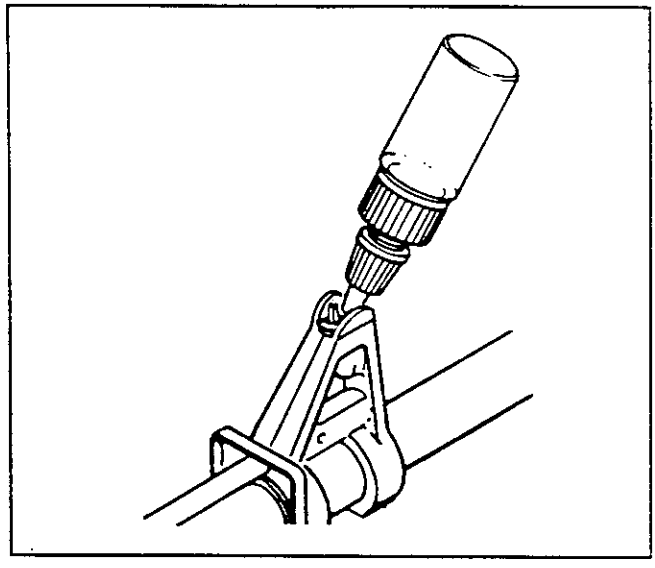
7. INSIDE BOLT AT REAR



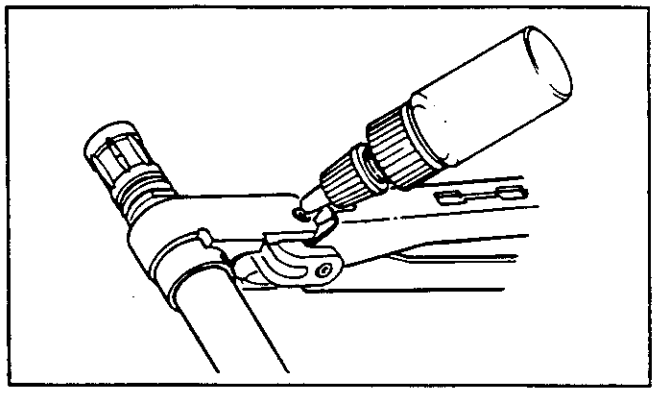
8. MOUTH OF BOLT CARRIER KEY



9. BOLT CARRIER EXHAUST PORTS (AFTER ASSEMBLY)



10. FRONT SIGHT DETENT



11. BIPOD HINGE PINS AND SPRINGS - ALSO WIPE SURFACES WITH LIGHTLY OILED CLOTH

3-2.5 Assembly

Reassemble weapon by reversing the procedure in Figure 3-6, Page 36, by starting at Page 3[illegible] and working back to Page 31.

SECTION 3 - UNIT MAINTENANCE INSTRUCTIONS

3-3 General

CAUTION: ENSURE CHAMBER IS EMPTY BEFORE STARTING MAINTENANCE PROCEDURES.

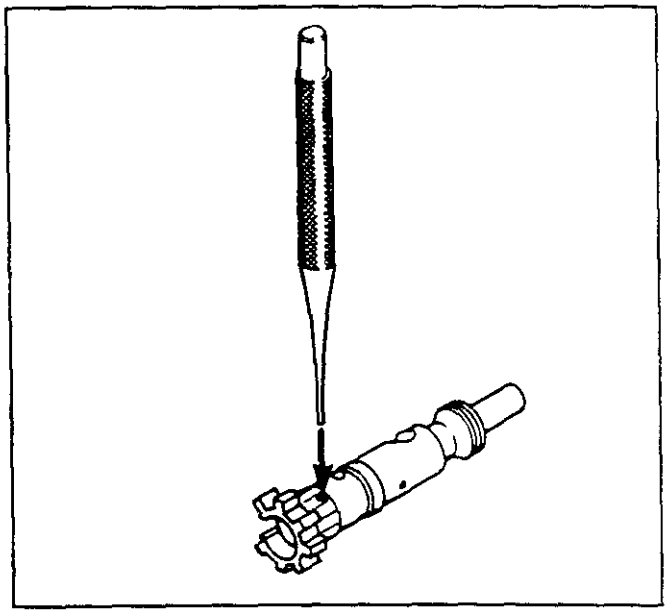
This section describes the maintenance to be performed by the unit armorer.

3-3.1 Disassembly

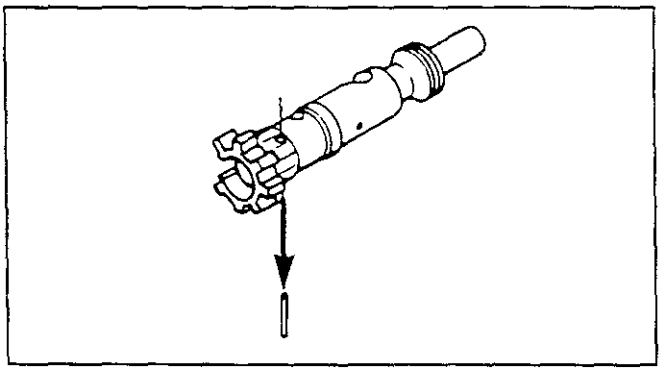
The extent of disassembly required for the performance of maintenance by the unit armorer is as follows:

Step	Action	Reference
3-3.1.1	Field Strip weapon and magazine.	Figure 3-2.1, Page 30
3-3.1.2	Remove ejector from bolt.	Figure 3-13

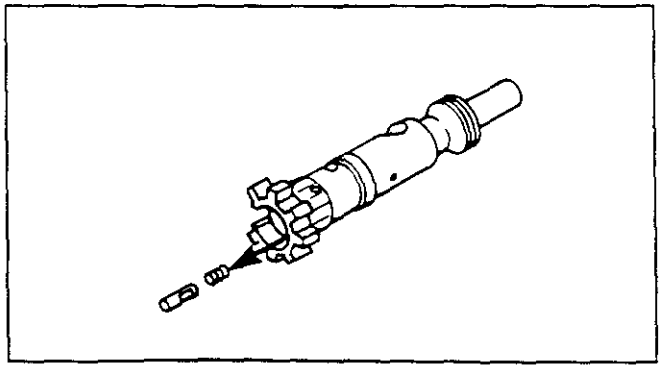
FIGURE 3-13 EJECTOR DISASSEMBLY



1. DRIVING OUT EJECTOR ROLL PIN - USE PUNCH, PIN DRIVE 1/16" DIA.



2. EJECTOR ROLL PIN REMOVED

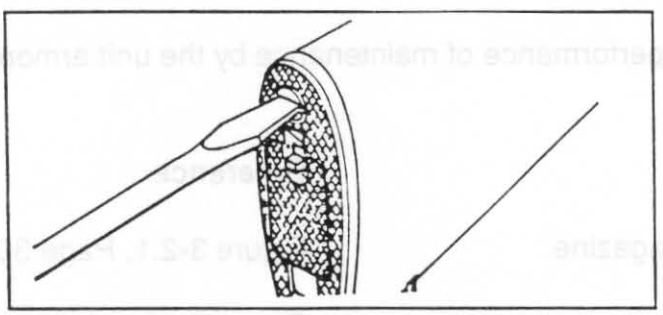


3. EJECTOR REMOVED

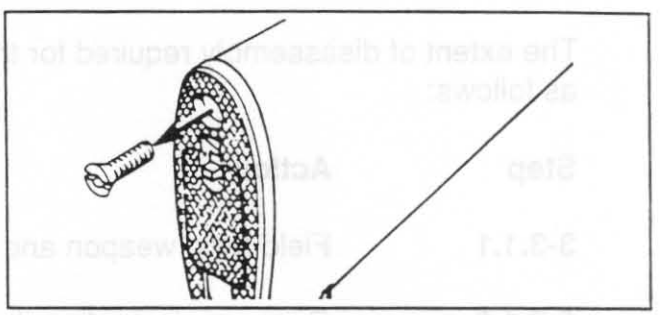
NOTE: When disassembling ejector, keep finger over ejector to keep it from being lost due to ejector spring force when ejector roll pin is driven out.

3-3.1.3 Remove buttcap screw with a large screwdriver. Remove buttstock slowly so that detent spring does not fly out and get lost. Remove spring and detent, then remove takedown pin - Figure 3-14.

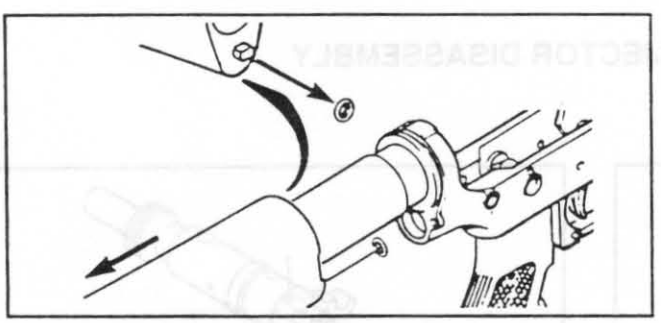
FIGURE 3-14 REMOVAL OF BUTTSTOCK AND DISASSEMBLY OF DETENTS AND TAKEDOWN PIN



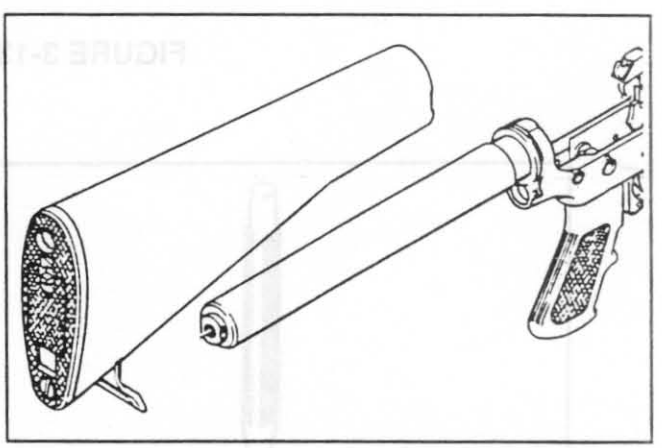
1. BUTTCAP SCREW REMOVAL



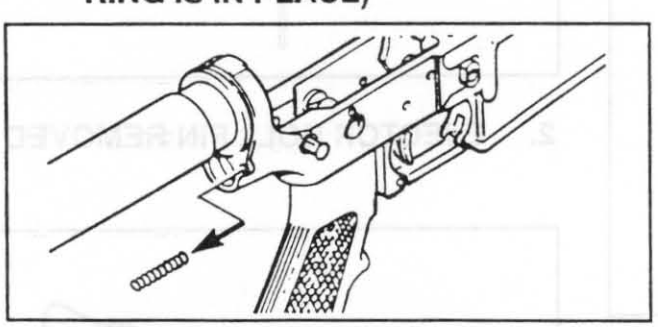
2. BUTTCAP SCREW REMOVED



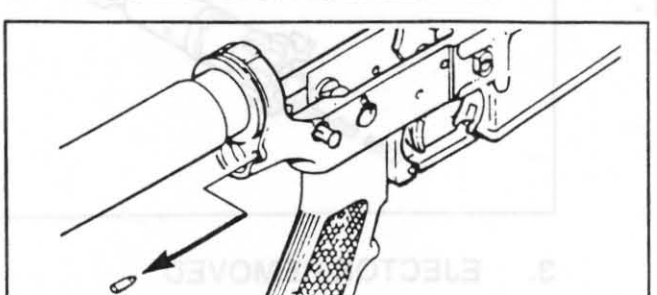
3. BUTTSTOCK REMOVAL (NOTE: WHEN ASSEMBLING, ENSURE "O" RING IS IN PLACE)



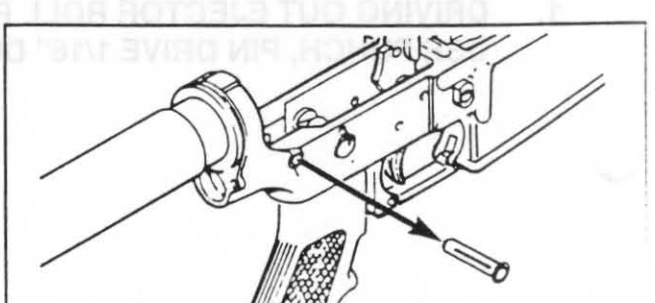
4. BUTTSTOCK REMOVED (SPACER NOT SHOWN, ALSO SEE FIGURE B-4, PAGE 72)



5. DETENT SPRING REMOVED



6. DETENT REMOVED



7. TAKEDOWN PIN REMOVED

3-3.1.4 Test all detents for freedom of movement. If any are stuck or frozen, rectify as follows:

3-3.1.4.1 Attempt to depress the detent with a small punch or screwdriver.

3-3.1.4.2 If the detent cannot be depressed enough for disassembly, saturate it with penetrating oil, bore cleaner, or carbon removing compound and let stand for twenty-four hours. Then disassemble the components as illustrated in Figures 3-14 through 3-16, Pages 44 through 47.

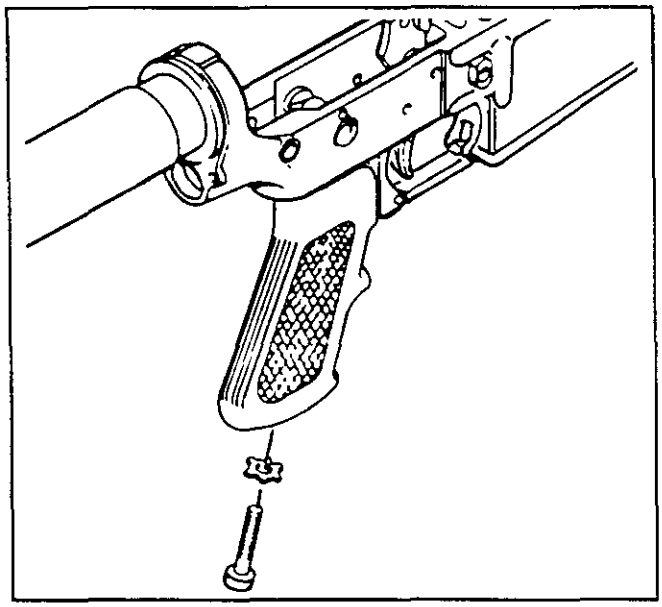
CAUTION: CARBON REMOVING COMPOUND MAY DAMAGE YOUR EYES OR INJURE YOUR SKIN. AVOID CONTACT TO PREVENT INJURY. THE COMPOUND SHOULD BE WASHED OFF THOROUGHLY WITH RUNNING WATER IF IT COMES IN CONTACT WITH THE EYES OR SKIN. AVOID CONTACT BY WEARING PROTECTIVE GLOVES, CLOTHING, AND GLASSES. If your skin does become exposed to carbon removing compound, then after thorough washing, it is helpful to rub a good lanolin base cream into the exposed area.

NOTE: The fully adjustable rear sight should not be disassembled at Unit level. If it does not function freely after being lubricated, send the weapon to a depot repair facility.

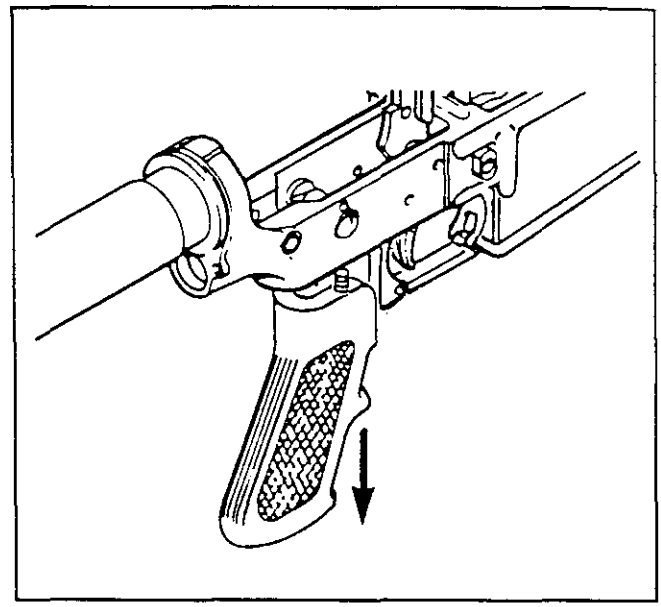
3-3.1.5 After disassembly, the springs, detents, and detent wells should be thoroughly cleaned, then oiled, before assembly to the weapon.

3-3.1.6 If the weapon cannot be disassembled by the methods described above, send it to a depot repair facility.

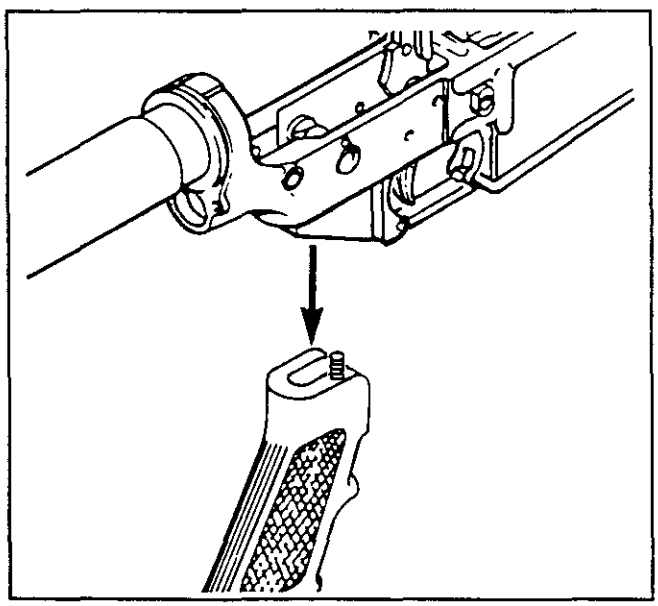
FIGURE 3-15 FIRE CONTROL SELECTOR DETENT DISASSEMBLY



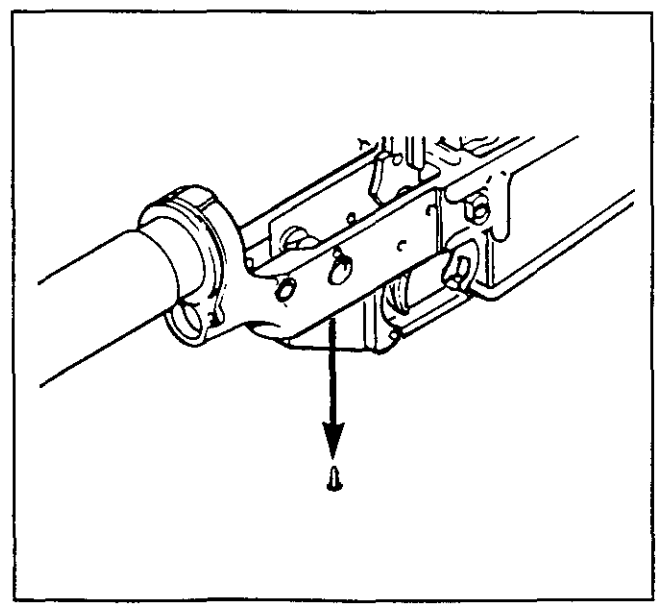
1. **PISTOL GRIP SCREW REMOVAL USING FLAT BLADE SCREWDRIVER**



2. **PISTOL GRIP REMOVAL**

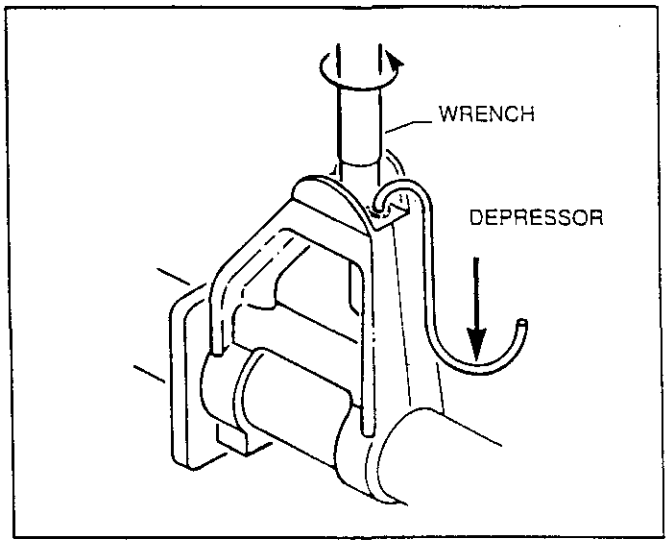


3. **PISTOL GRIP REMOVED**

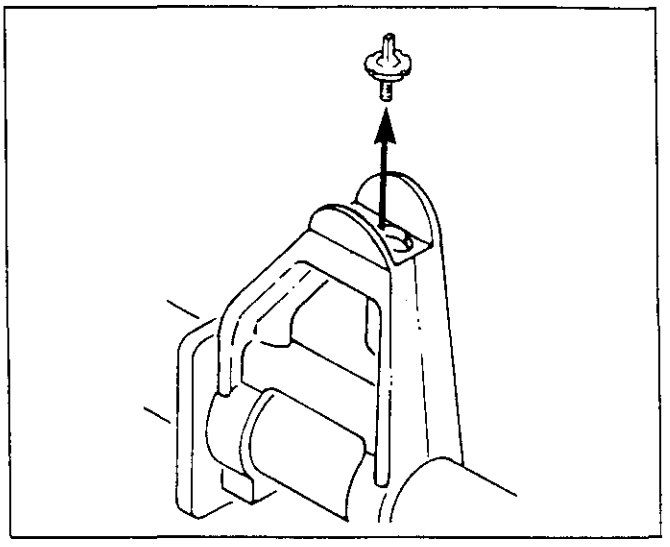


4. **DETENT REMOVED**

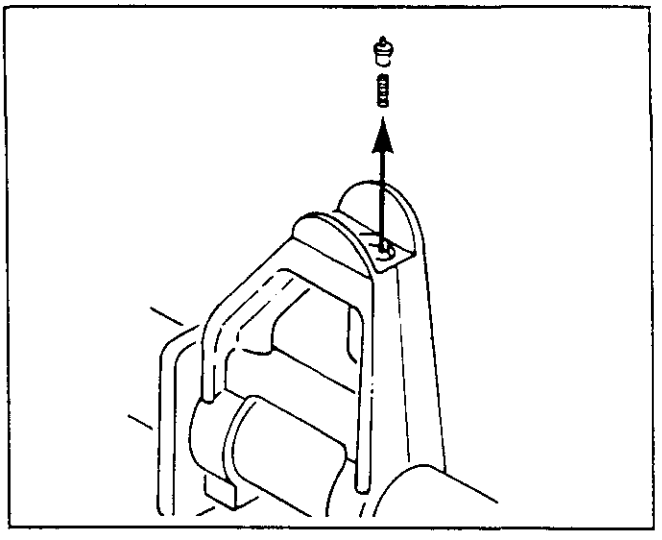
FIGURE 3-16 FRONT SIGHT POST DISASSEMBLY



1. FRONT SIGHT POST REMOVAL



2. FRONT SIGHT POST REMOVED



3. FRONT SIGHT DETENT REMOVED

NOTE: The front sight is removed by turning it counter-clockwise while holding the detent depressed or by using the detent depressor, PN 62672, and the wrench, front sight adjusting PN 64882 (four-position wrench for square post sight).

3-3.2 Cleaning

Clean the weapon parts as instructed in Paragraph 3-2.2, Page 30. Also remove all signs of rust on steel surfaces using crocus cloth. Do not use a coarser abrasive. If corrosion is found on aluminum surfaces, send to a maintenance facility for repair.

3-3.3 Inspection and Repair Proceed as instructed in Paragraph 3-2.3, Page 40. Also comply with the instructions which follow:

3-3.3.1 Bolt Assembly Inspect for cracks in the bolt (especially in the area of the cam pin hole), condition of the locking lugs, pitted or chipped bolt face, elongated firing pin hole, or broken bolt rings. If any of these conditions are discovered, turn in the item to a maintenance facility for repair. Also, inspect the ejector, ejector spring, and ejector pin for excessive wear or rust and replace if necessary.

3-3.3.2 Upper Receiver Group Inspect the upper receiver for cracks and parts for wear. If these conditions are discovered, turn in the item to a maintenance facility for repair. If the receiver finish is scratched or worn off (shiny bright), remove all lubricant from the surface and touch up with lacquer listed in Paragraph 3-1.2, Page 29. If corrosion is found, send item to a maintenance facility for repair. Also inspect the charging handle latch for worn or damaged latch, for worn or damaged latch hook and worn or weak springs; replace if necessary. Inspect bipod and carrying handle for cracks and distortion and bipod for weak springs; replace if necessary. (See Section 7, Page 59.)

3-3.3.3 Lower Receiver Group Inspect pistol grip for cracks and for damaged screw or lockwasher. Replace damaged parts. Inspect the stock assembly for cracks or damage and replace if necessary. Damaged or cracked stocks are to be turned in to a maintenance facility for repair. Inspect the lower receiver extension takedown pin, pivot pin, and fire control selector, as well as their detents and detent pin. Replace worn or damaged parts. Inspect the receiver finish for scratches or wear (shiny bright areas). If discovered, refinish as in 3-3.2. If corrosion is found on the receiver, turn it in to a maintenance facility for repair. Inspect buffer assembly; if red hydraulic fluid leak is found, replace buffer assembly. **DO NOT** DISASSEMBLE BUFFER ASSEMBLY.

3-3.4 Lubrication

Proceed as instructed in Paragraph 3-2.4, Page 40. Make sure bipod springs are well lubricated.

3-3.5 Reassembly

Reassemble the weapon and magazine by reversing the disassembly procedure in Paragraph 3-3.1, Page 43, by starting at Page 47 and working back to Page 43. Then complete assembly as stated in Paragraph 3-2.5, Page 42. Reassemble carrying handle and bipod if necessary as described in Section 7, Page 59.

CAUTION: USE CORRECT PARTS FOR SAFE, RELIABLE FUNCTION. PARTS ARE NOT INTERCHANGEABLE WITH OTHER M16A2 WEAPONS, UNLESS PART NUMBERS ARE IDENTICAL AND NO OTHER LIMITATIONS APPLY.

SECTION 4 - PREVENTIVE MAINTENANCE SERVICES

3-4 General

CAUTION: ENSURE CHAMBER IS EMPTY BEFORE STARTING MAINTENANCE PROCEDURES.

Preventive maintenance is the systematic care, inspection, and servicing of equipment to keep it in serviceable condition, prevent breakdowns, and assure operational readiness. The operator's role is to perform daily service and to assist the unit armorer in the performance of scheduled periodic services.

3-4.1 Specific Procedures

Listed below are the specific procedures to be performed by the **operator (O)** and **unit armorer (A)**.

Step	Interval	Action	Reference
3-4.1.1	Before operation (O)	Wipe excessive oil from bore and chamber	Figure 3-11.2, Page 41
3-4.1.2	Before operation (O)	Hand function weapon to assure proper condition	Paragraph 2.5, Page 24
3-4.1.3	After operation (O)	Clean and lubricate	Paragraph 3-2.2, Page 30 Paragraph 3-2.4,Page 40
3-4.1.4	Monthly (A) when weapon in use or every 6 months (A) when weapon is not in use but stored ready to use.	Clean, inspect and lubricate. Test detents and springs for free movement.	Section 3, Page 43

SECTION 5 - TROUBLESHOOTING

3-5 General

CAUTION: ENSURE CHAMBER IS EMPTY BEFORE STARTING MAINTENANCE PROCEDURES.

The troubleshooting instructions which follow are to aid the operator and unit armorer to restore worn, damaged, or inoperative weapons to a serviceable condition.

WARNING: WRONG LOADING SEQUENCE COULD CAUSE UNINTENTIONAL DISCHARGE. NEVER INSTALL LOADED MAGAZINE IN LMG WITH BOLT FORWARD. BOLT MUST BE FULLY TO THE REAR WITH FIRE CONTROL SELECTOR ON "SAFE" BEFORE LOADED MAGAZINE IS INSTALLED.

	Malfunction	Probable Cause	Corrective Action	Operator-O Armorer-A
3-5.1	Failure to fire.	1. Selector lever on SAFE.	Move selector to FIRE.	O
		2. Bolt forward.	Cock action and install loaded magazine.	O
		3. Damaged firing pin.	Replace.	O
		4. Improper assembly of firing pin in bolt carrier group.	Remove firing pin and install correctly. Inspect retaining pin for damage.	O
		5. Too much oil in bolt firing pin recess.	Disassemble bolt and clean out excess oil.	O
		6. Fire control mechanism improperly assembled or with worn, broken, or missing parts.	Maintenance facility repair.	A
		7. Trigger pin improperly installed.	Check that tails of hammer spring engage grooves in trigger pin.	A
		8. Failure to lock.	See failure to lock, 3-5.9	O/A

SECTION 5 - TROUBLESHOOTING (CONT)

	Malfunction	Probable Cause	Corrective Action	Operator-O Armorer-A
3-5.2	Failure to unlock (bolt seizes - will not rotate from locked position)	1. Bolt group, firing pin or barrel extension burred, dirty or carboned	Remove magazine. Hold weapon pointing up (stay clear of muzzle) and strike butt sharply and squarely on ground while pulling back on charging handle* Remove bolt group, clean and lubricate.	O

***CAUTION: MAKE CERTAIN YOU AND OTHERS ARE CLEAR OF MUZZLE. STRIKE BUTT SQUARELY ON GROUND TO PREVENT DAMAGE TO BUTTSTOCK.**

3-5.3	Failure to extract.	1. Dirty or corroded ammunition.	Remove ammunition and clean the magazine.	O
		2. Carbon and dirt build-up in chamber.	Clean chamber.	O
		3. Carbon and dirt build-up in extractor recess or extractor lip.	Disassemble and clean.	O
		4. Defective extractor, extractor spring, or pin.	Replace.	O
		5. Rubber insert not assembled in extractor spring.	Install extractor spring assembly as shown in Figure B-2, Page 69.	A
		6. Rim shear due to badlly pitted chamber.	Maintenance facility replacement.	A
		7. Separated cartridge case caused by excessive headspace, etc.	Remove bolt and run bore brush through from muzzle end of barrel. If this does not remove separated case, turn in for repair. In any event, check headspace.	A
3-5.4	Failure to eject.	1. Broker ejector.	Replace.	A
		2. Jammed ejector.	Disassemble and clean.	A
		3. Worn or broken ejector spring.	Replace.	A

SECTION 5 - TROUBLESHOOTING (CONT)

	Malfunction	Probable Cause	Corrective Action	Operator-O Armorer-A
	Failure to eject. (cont).	4. Short recoil.	See "Short Recoil" in malfunction column.	A
3-5.5	Failure to remain cocked.	1. Worn, broken, or missing parts in fire control mechanism.	Maintenance facility repair.	A
		2. Hammer pin incorrectly installed.	Remove and install correctly.	A
		3. Wrong bolt carrier.	Remove and install correct bolt and bolt carrier.	A
3-5.6	Failure to feed.	1. Magazine not seated properly.	Adjust magazine catch. Push in magazine catch button and rotate catch clockwise to tighten.	A
		2. Dirty or corroded ammunition.	Remove and clean ammunition from magazine and clean both.	O
		3. Dirty magazine.	Disassemble and clean.	O
		4. Defective magazine.	Replace magazine.	O
		5. Too many rounds in magazine.	Reload magazine with **NO MORE THAN** 30 rounds and ensure chamber is empty. *	O
		6. Restricted buffer assembly action.	Remove, clean, and lubricate buffer assembly and action spring.	O
		7. Short recoil.	See "Short Recoil" in malfunction column.	O
3-5.7	Double feed.	1. Defective magazine.	Replace magazine.	O
3-5.8	Failure to chamber.	1. Dirty or corroded ammunition.	Remove and clean ammunition and clean the magazine.	O
		2. Damaged ammunition.	Replace.	O

*** CAUTION: DO NOT LOAD THE MAGAZINE BEYOND ITS RATED CAPACITY.**

SECTION 5 - TROUBLESHOOTING (CONT)

	Malfunction	Probable Cause	Corrective Action	Operator-O Armorer-A
	Failure to chamber (cont).	3. Carbon build up in chamber.	Clean chamber. Clean and lubricate weapon.	O
		4. Bolt cam pin missing.	Replace.	O
		5. Restricted movement of bolt carrier group.	Disassemble, thoroughly clean and lubricate weapon. Remove charging handle from upper receiver; point receiver upward, and install bolt carrier group in receiver. Slowly slide carrier in receiver to to check alignment and free movement of carrier key and gas tube. If binding occurs, turn rifle in to a maintenance facility for repair.	O/A
		6. Loose or damaged bolt carrier key.	Maintenance facility repair.	A
		7. Improperly assembled extractor spring.	Disassemble and assemble correctly, making sure rubber insert is installed.	A
		8. Bent gas tube.	Maintenance facility repair.	A
		9. Misaligned carrier and gas tube.	Maintenance facility repair.	A
3-5.9	Failure to lock (may also be cause of failure to fire).	1. Dirt, corrosion, or carbon build-up on bolt or barrel extension locking lugs.	Clean.	O
		2. Jammed extractor.	Clean and lubricate.	O
		3. Dirt on bolt face.	Clean.	O
		4. Jammed ejector.	Disassemble and clean.	O
		5. Restricted buffer assembly movement.	Remove buffer and action spring, clean and lubricate. Also clean inside receiver extension.	O

SECTION 5 - TROUBLESHOOTING (CONT)

	Malfunction	Probable Cause	Corrective Action	Operator-O Armorer-A
	Failure to lock (cont).	6. Damaged ammunition.	Replace.	O
		7. Weak or broken action spring.	Replace.	O
3-5.10	Short recoil.	1. Gaps in bolt rings **not** staggered.	Stagger bolt ring gaps.	O
		2. Carbon build-up or dirt in carrier key and on outside of gas tube.	Clean and lubricate bolt carrier group and outside of gas tube.	O
		3. Restricted movement of bolt carrier group or buffer assembly.	See "Failure to Lock" in malfunction column.	O/A
		4. Missing or broken bolt rings or loose carrier key.	Maintenance facility repair.	A
		5. Gas leakage due to broken or loose gas tube.	Maintenance facility repair.	A
		6. Restricted gas flow through gas tube due to propelled deposits.	Maintenance facility repair.	A
3-5.11	**Bolt fails to lock to rear after last shot fired.**	1. Broken or dirty bolt carrier or hammer.	Clean or replace. (Operator - clean only)	O/A
		2. Dirty or corroded bolt catch.	Clean and lubricate. If disassembly is necessary, turn in to a maintenance facility for repair.	O/A
		3. Dirty or corroded magazine catch.	Clean and lubricate. If disassembly is necessary, turn in to a maintenance facility for repair.	O/A

SECTION 5 - TROUBLESHOOTING (CONT)

	Malfunction	Probable Cause	Corrective Action	Operator-O Armorer-A
	Bolt fails to lock to rear at last shot fired (cont).	4. Broken bolt catch or spring.	Maintenance facility repair.	A
3-5.12	Failure to cycle with selector set at FIRE.	1. Worn, broken, or missing parts in fire control mechanism.	Maintenance facility repair.	A
3-5.13	Fires with selector at SAFE.	1. Worn, broken or missing parts in fire control mechanism.	Maintenance facility repair.	A
3-5.14	Selector lever binds.	1. Dirt, corrosion or lack of lubrication.	Clean and lubricate.	O/A
3-5.15	Weapon fires only one round with selector set on FIRE.	1. Magazine empty.	Reload.	O
		2. Trigger released early.	Pull trigger.	O
		3. Worn, broken or missing parts in fire control mechanism.	Maintenance facility repair.	A
		4. Gas tube installed wrong.	Maintenance facility repair.	A
3-5.17	Weapon fires fast or recoil is excessive.	1. Broken or leaking buffer assembly.	Replace buffer assembly.	O/A
		2. Wrong buffer assembly.	Replace buffer assembly.	O/A

NOTE: Most of the malfunctions already listed could also be caused by ammunition that is dirty, damaged, faulty or of wrong specification. Where this is especially likely, a note has been included in the list, but in other instances, time could be saved by making sure the ammunition is good before investigating the weapon.

Also remember the M16A2 LMG fires from an open bolt, unlike other M16A2 weapons. This also means that fewer parts are interchangeable with other M16A2 weapons and wrong parts will cause malfunctions.

SECTION 6 - ZEROING SIGHTS - USING 5.56mm NATO BALL AMMUNITION (M855)

3-6 General

CAUTION: ENSURE CHAMBER IS EMPTY BEFORE STARTING MAINTENANCE PROCEDURES.

The weapon was zeroed before being shipped from the factory; thus only minor adjustments should be needed when first used. Zeroing will also be necessary when maintenance has been performed which would alter the sight alignment. The procedure in this section is suitable for zeroing at 25 meters, but may be adapted for use at longer ranges as indicated in the following tables which show the change in point of bullet impact for each click adjustment of the sights.

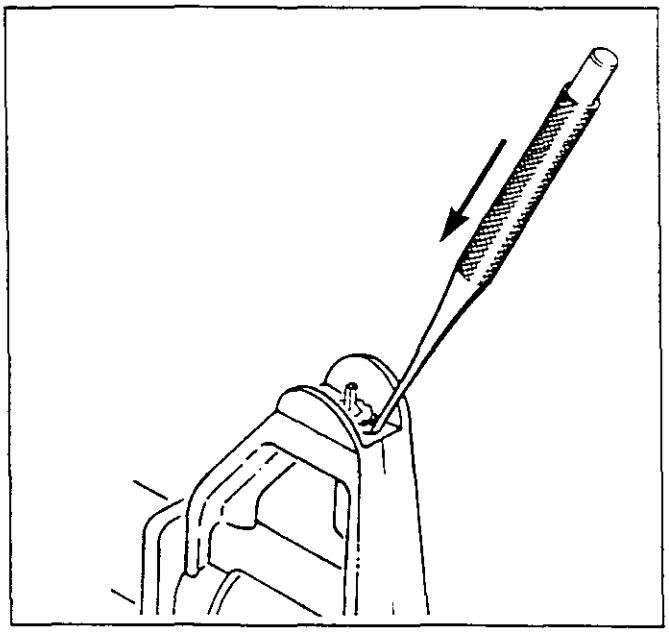
Elevation - Up/Down

Distance to Target	Change in Point of Impact for Each Click Adjustment of the Front Sight
25m	0.9cm (3/8 in)
100m	3.5cm (1 3/8 in)
200m	7.0cm (2 3/4 in)

Windage - Left/Right

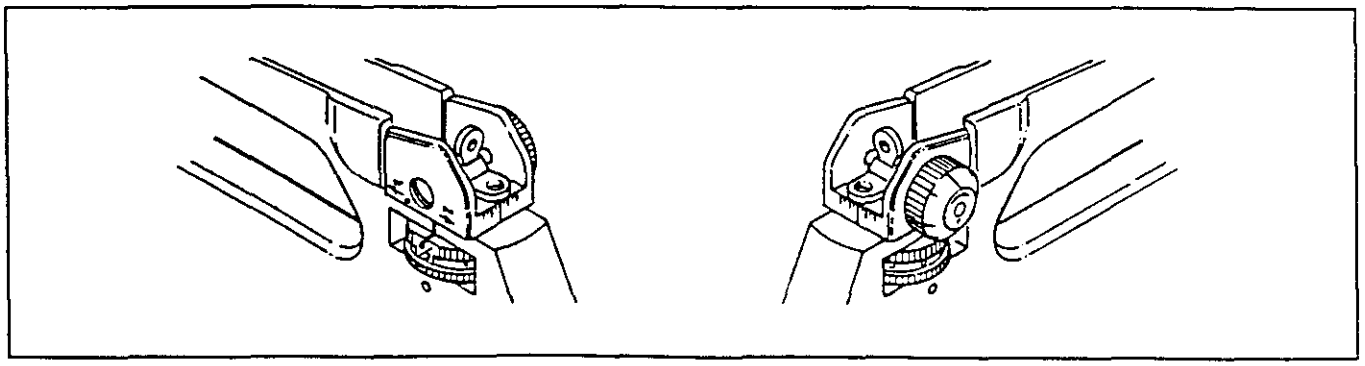
Distance to Target	Change in Point of Impact for Each Click Adjustment of the Rear Sight
25m	0.3cm (1/8 in)
100m	1.25cm (1/2 in)
200m	2.50cm (1 in)

FIGURE 3-17 ZEROING IN ELEVATION



Also see Figure 2-9.5, Page 13

FIGURE 3-18 SETTING REAR SITE FOR ZEROING (WINDAGE)



Also see Figure 2-9.6, Page 13

3-6.1 Zeroing Procedure

3-6.1.1 Set elevation knob to 8/3 low (300 meter mark), then raise it one click. The elevation knob **must not** be moved again during the zeroing procedure.

3-6.1.2 Flip peep sight back so that small unmarked aperture is up.

3-6.1.3 Center the rear sight by turning the windage knob until line on sight is aligned with center line on calibration scale under the sight.

3-6.1.4 Load 5.56mm NATO Ball ammunition, then carefully aim and fire at the center of the target bull's eye at 25 meters. Fire ten rounds single shot to establish a group on the target. To fire single shot, install magazine loaded with only one round.

3-6.1.5 Compare the center of your group with the center of the bull's eye. If they are the same, further sight adjustment is not necessary.

3-6.1.6 If center of group does not match center of bull's eye, measure distance up or down (elevation) and distance right or left (windage).

3-6.1.7 Calculate number of front sight clicks required to raise or lower the point of impact:

1 click = .9cm (3/8 in)	}	
2 clicks = 1.8cm (3/4 in)	}	Change in Point of
3 clicks = 2.7cm (1 1/8 in)	}	Impact at Target
4 clicks = 3.5cm (1 3/8 in)	}	

3-6.1.8 Depress front sight plunger and turn front sight number of clicks required for elevation adjustment. Front sight is marked with "UP" and arrow to indicate direction of rotation to move point of impact up. Turning sight post clockwise will lower the sight and raise the point of impact, while counter-clockwise will raise the sight and lower the point of impact.

3-6.1.9 Calculate number of windage knob clicks required to move the point of impact right or left :

1 click = .3cm (1/8 in)	}	
2 clicks = .6cm (1/4 in)	}	Change in Point of
3 clicks = .9cm (3/8 in)	}	Impact at Target
4 clicks = 1.2cm (1/2 in)	}	

3-6.1.10 Turn windage knob required number of clicks. Windage knob is marked with "R" and arrow to indicate direction of rotation of knob to move point of impact to the right. Turning knob clockwise will move point of impact to the right; counter-clockwise to the left.

3-6.1.11 Repeat Steps 3-6.1.4 through 3-6.1.10 until your point of impact matches center of target bull's eye. Your sights are now zeroed in.

3-6.1.12 Make a careful note of windage setting and leave it set that way. Set elevation knob on rear sight one click down to a 8/3 low setting and flip peep sight to bring large aperture up for future use at the most common range of 0-200m.

SECTION 7 - DAMAGED PARTS REPLACEMENT - UNIT ARMORER

3-7 General

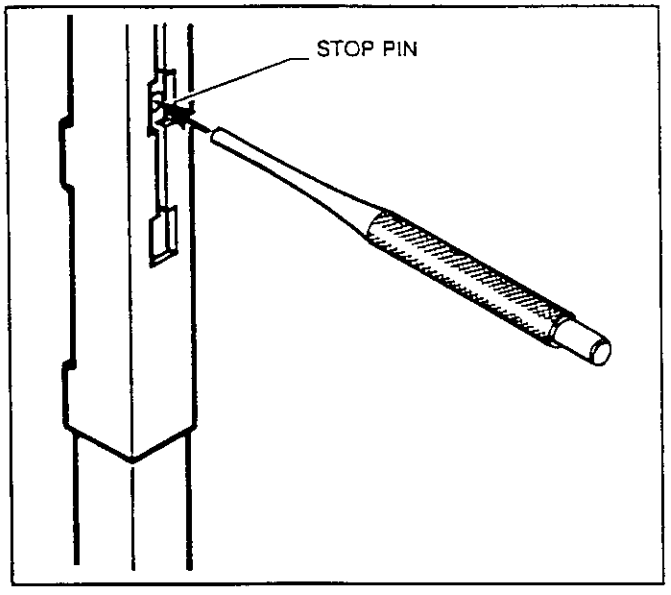
CAUTION: ENSURE CHAMBER IS EMPTY BEFORE STARTING MAINTENANCE PROCEDURES.

This section tells the unit armorer how to replace some damaged parts that are not normally disassembled for routine maintenance. These parts include components of the bipod and carrying handle.

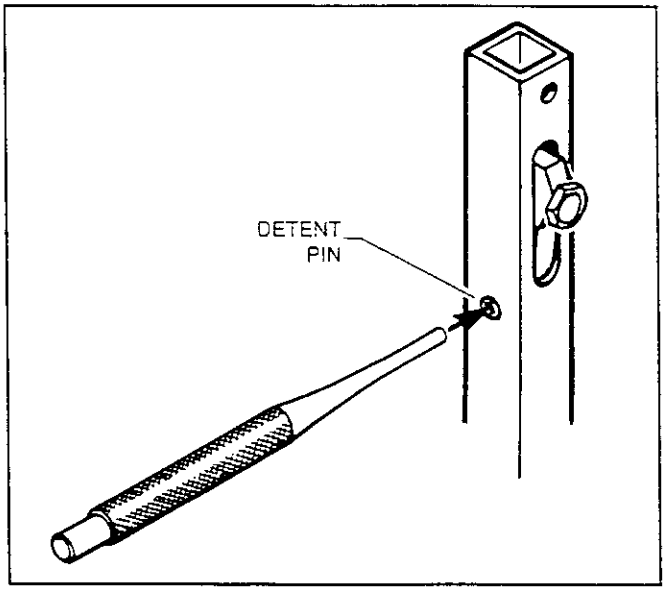
3-7.1 Bipod Assembly, Adjustable

3-7.1.1 Installation and Removal The M16A2 LMG bipod is installed at the factory and should not be removed. Unit armorer may make repairs that do not include the removal of the bipod head; otherwise, return the weapon to a maintenance facility for repairs. The Unit Armorer may disassemble the bipod to the extent shown in Figure 3-19.

FIGURE 3-19 DISASSEMBLY OF BIPOD LEGS

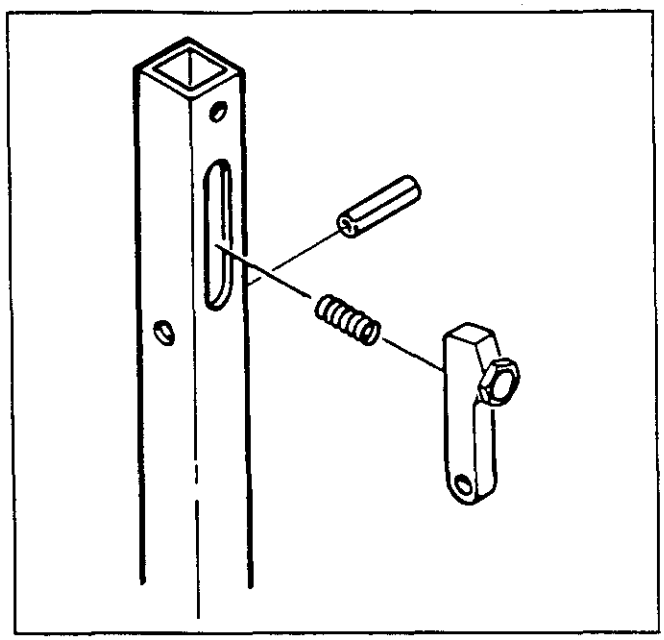


1. Extend inner legs to locate stop pins as shown. Use punch, pin 1/8" to drive out pins. Remove inner leg.

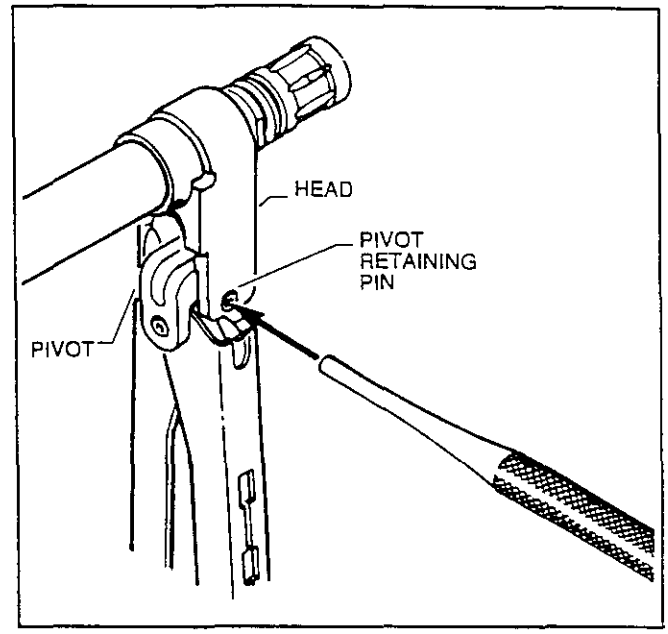


2. Inner leg removed. Use punch, pin 1/8" to drive out detent pin. Hold detent to control detent spring during pin removal.

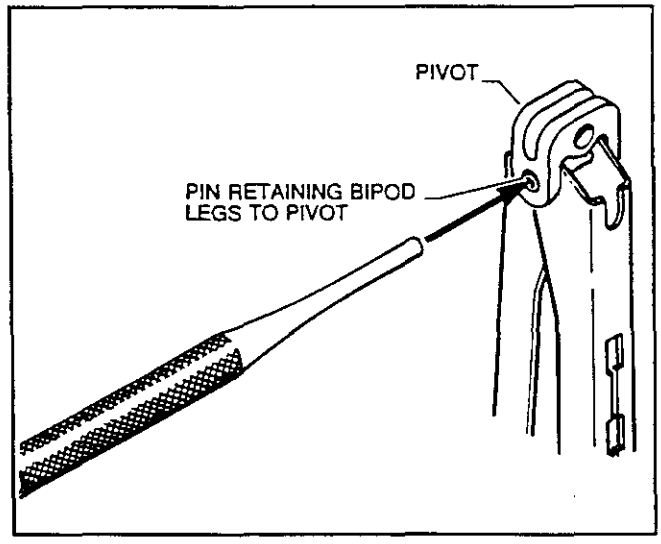
FIGURE 3-19 DISASSEMBLY OF BIPOD LEGS (CONT)



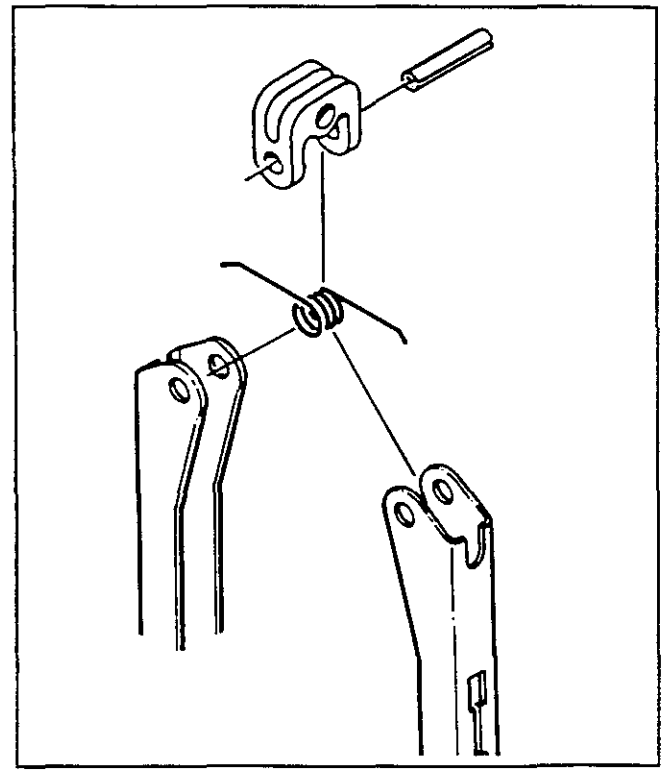
3. Detent, spring and pin removed from inner leg.



4. Remove pivot from head using punch, pin 1/8" to drive out pivot retaining pin.



5. Remove leg from pivot using punch, pin 1/8" to drive out the pin. Legs must be held secure against spring force during pin removal.



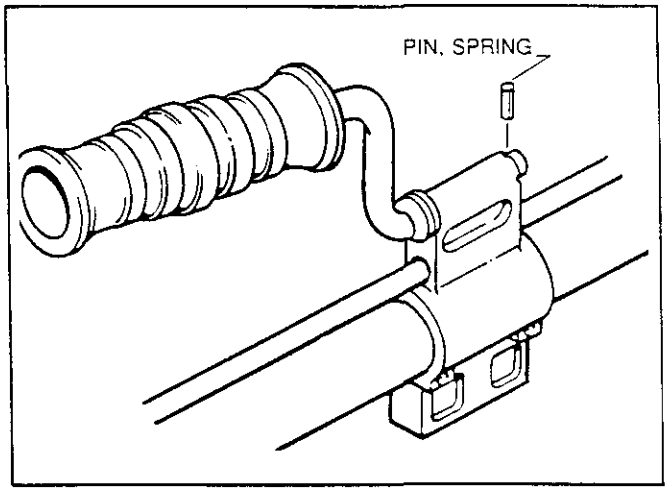
6. Legs, pivot and spring removed.

7. Note: Assemble in reverse order. Use punch, pin to align holes and spring before attempting to insert a pin.

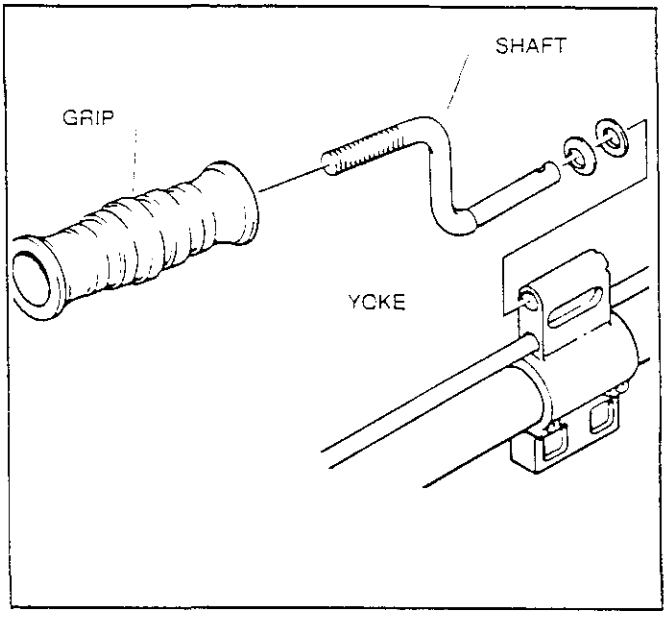
3-7.2 Carrying Handle

3-7.2.1 Installation and Removal It should only be necessary to remove the carrying handle if it becomes damaged and must be repaired or replaced.

FIGURE 3-20 DISASSEMBLY AND ASSEMBLY OF CARRYING HANDLE

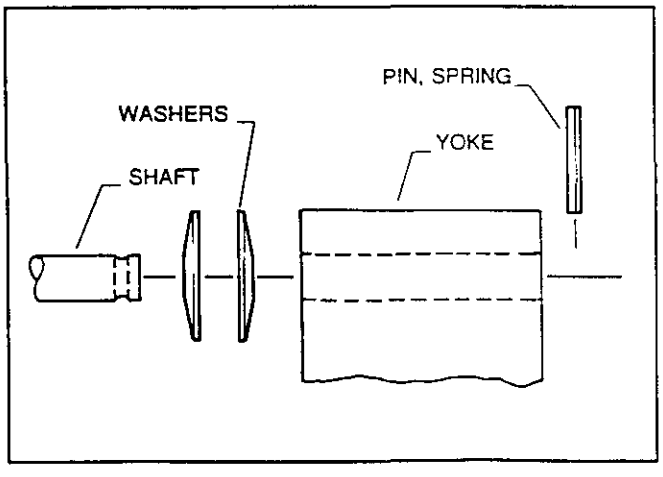


1. Use punch, pin 3/32" to remove pin, spring. Pull shaft out of yoke and remove washers.

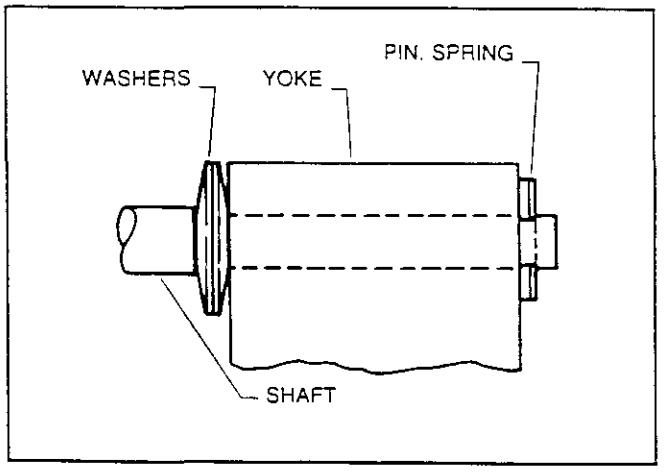


2. Separate grip, carrying handle from shaft if necessary by unscrewing one from the other.

3. Assemble in reverse order.



4. Washers, spring belleville must be assembled face to face over end of shaft.

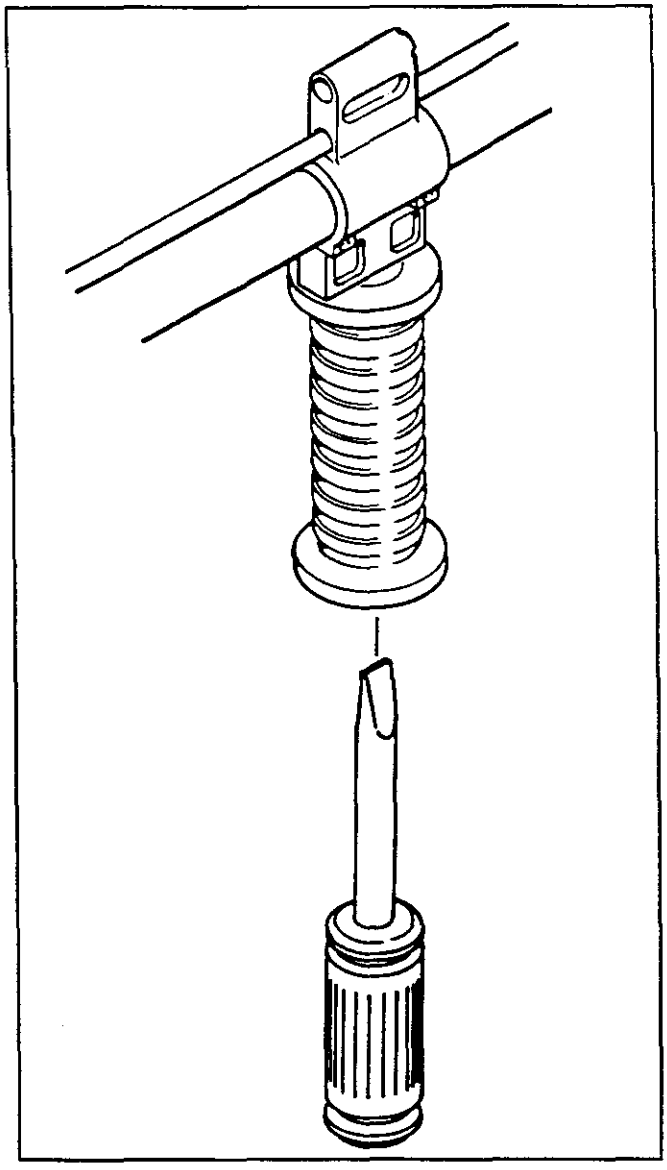


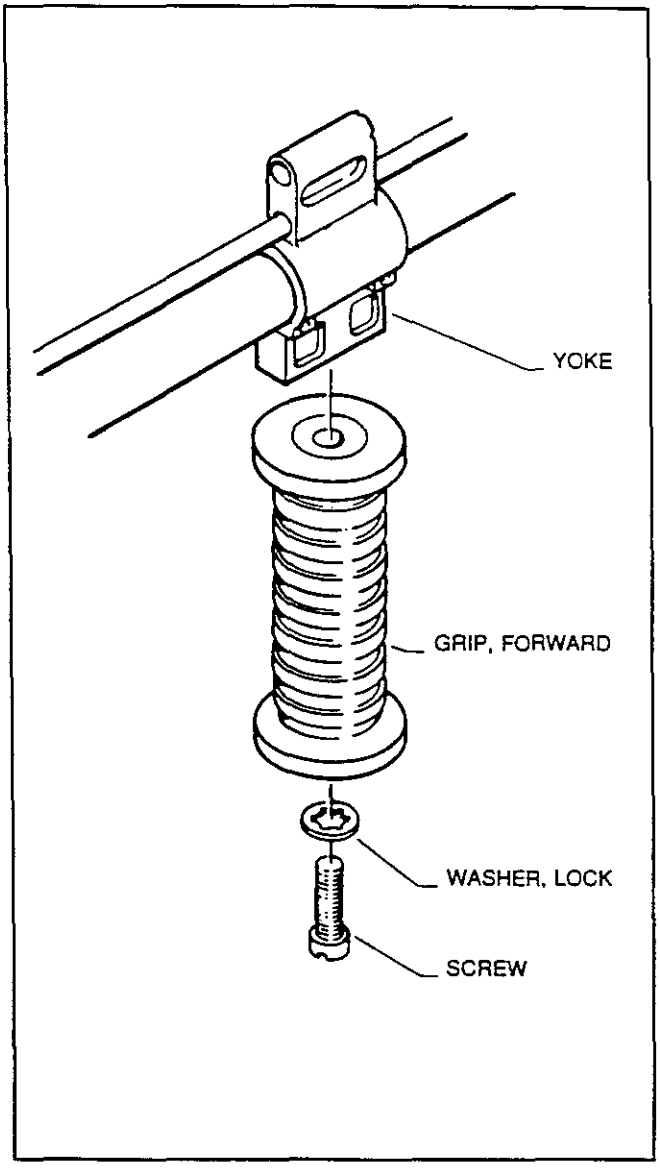
5. Secure shaft with pin, spring.

3-7.3 Grip, Forward

3-7.3.1 Installation and Removal It should only be necessary to remove the grip, forward if it becomes damaged and must be repaired or replaced.

FIGURE 3-21 DISASSEMBLY AND ASSEMBLY OF GRIP, FORWARD





1. Use screwdriver to remove screw, forward grip.
2. Separate washer, lock from screw and grip, forward from yoke.
3. Assemble in reverse order using new washer, lock.

3-7.4 Buttstock Stowage

3-7.4.1 Installation and Removal It should only be necessary to disassemble the buttstock stowage for more than routine cleaning or for repair/replacement of damaged parts.

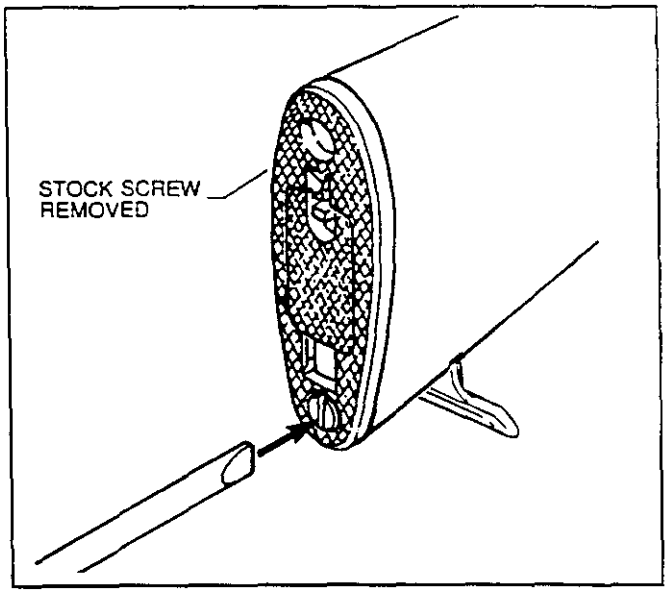
3-7.4.1.1 Remove stock screw. This will permit the buttstock to be removed from the weapon (Figure 3-14, Page 44) (Figure B-4., Page 71).

3-7.4.1.2 Remove swivel screw and swivel. The swivel acts as the retaining nut for the screw (Figure 3.23.1).

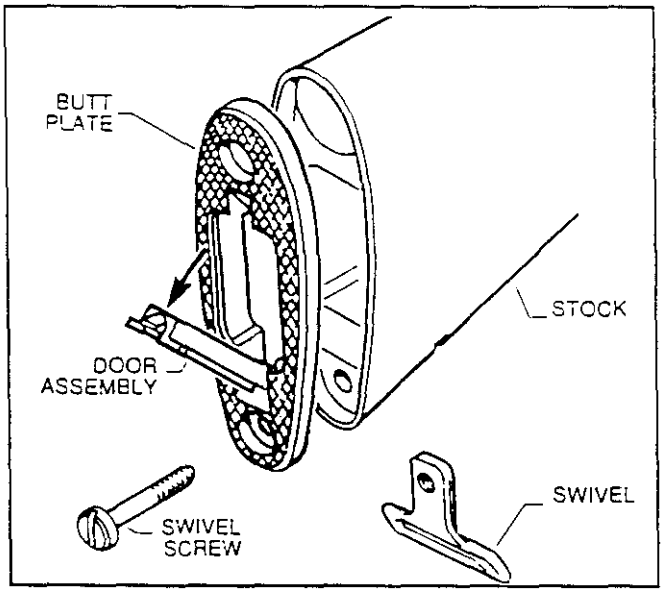
3-7.4.1.3 Remove the buttplate assembly from the stock (Figure 3-22.2).

3-7.4.1.4 Remove door assembly from plate. This will expose and permit disassembly of hinge pin. (This pin is a slip fit in the hinge.) (Figure 3-22.3)

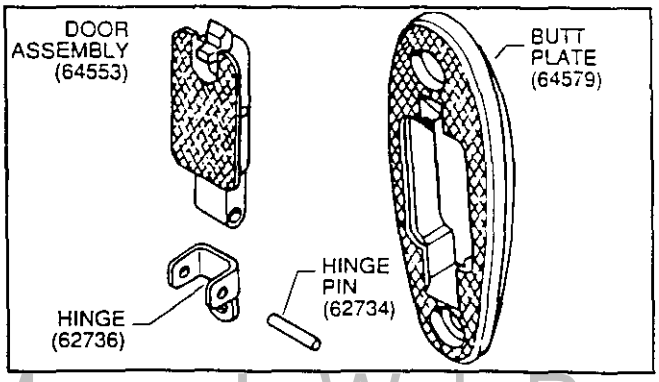
FIGURE 3-22 BUTTSTOCK STOWAGE DISASSEMBLY



1. Removal of swivel screw from buttstock assembly.



2. Separation of buttplate, swivel screw and swivel.



3. Separation of door assembly, hinge and hinge pin.

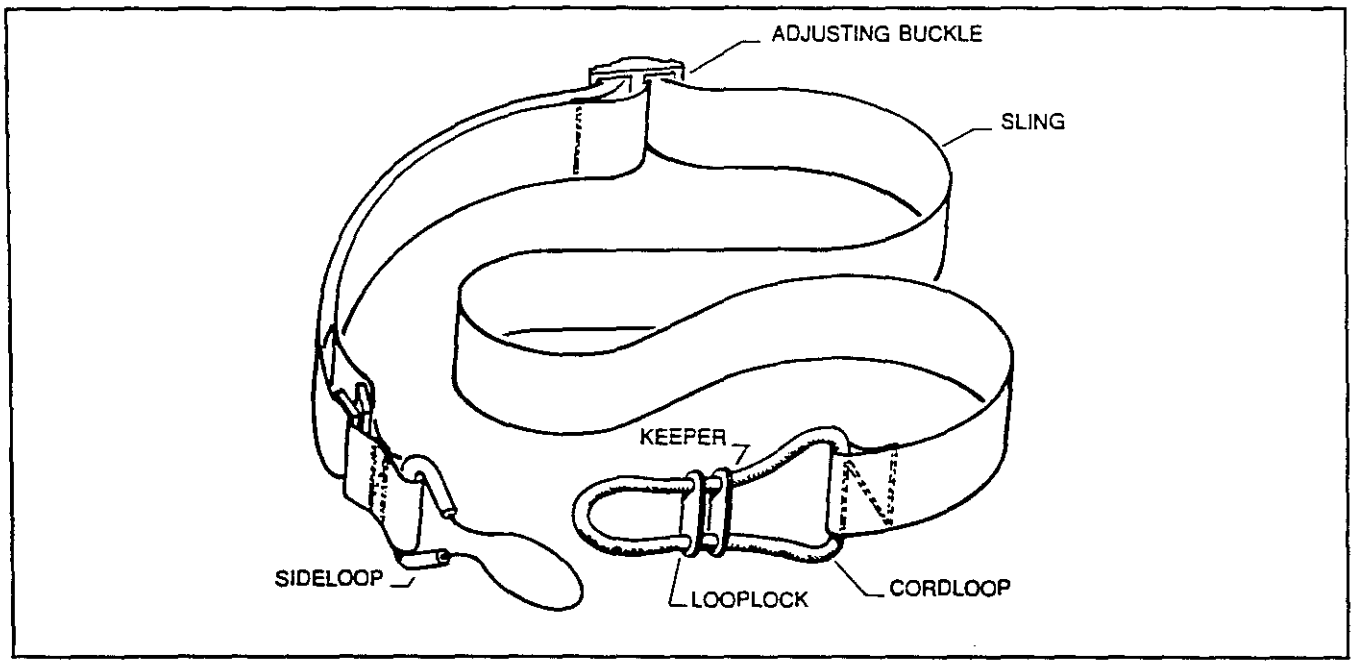
CHAPTER IV - ACCESSORY EQUIPMENT

SECTION 1 - SLING

4-1 Sling

This section contains maintenance information on the sling used with the M16A2 LMG.

FIGURE 4-1 SLING



4-1.1 Cleaning

Scrub with a stiff, dry brush to remove loose foreign matter. Then scrub with soap and water to remove oil, grease, and imbedded dirt. Rinse well with water and dry thoroughly. Do not use gasoline, kerosene, or cleaning solvent as they may damage the sling.

4-1.2 Inspection

Inspect the sling and cordloop by stretching and pulling the fabric to check for evidence of rotting or weakening due to mildew. If fabric shows signs of weakening, replace it. Inspect sideloop, keeper, looplock and adjusting buckle for damage. If damage would prevent full use of the sling, replace it.

CHAPTER V - AMMUNITION

5-1 General

The ammunition for M16A2 weapons, including the M16A2 LMG, is classified as small-arms ammunition and is in the form a complete round. A complete round (cartridge) consists of all the components necessary to fire the weapon once, that is, projectile (bullet), cartridge case, propellent and primer.

5.2 Authorized Ammunition

The following U.S. Military cartridges are among those authorized for use with this weapon:

A. 5.56 x 45mm NATO Cartridge (M855 or SS109)
B. 5.56 x 45mm U.S. Standard Cartridge (M193 BALL)
C. Tracer and Dummy Cartridges equivalent to A or B
D. Blank cartridges (M200 or their **exact** equivalent)

IMPORTANT: To insure proper operation of M16A2 weapons, use ammunition manufactured to U.S. Military Specifications.

NOTE: The firing characteristics of the M16A2 LMG are shown on the tabulated data sheet on Page IV at the beginning of this manual.

APPENDIX A

PARTS LIST - M16A2 LMG (OPERATOR INSTALLED)

Parts for: M16A2 LMG

PART NUMBER	MAJOR GROUPS AND ASSEMBLIES
62328	Magazine Assembly: 30 cartridge capacity
	UPPER RECEIVER GROUP (See Figure B-3.)
65349	Handguard Assembly (2)
62290	Charging Handle Assembly
	BOLT CARRIER GROUP (See Figure B-2.)
62335	Pin, Firing Pin Retaining
62294	Pin, Firing
61704	Pin, Bolt Cam
61563	Pin, Extractor
61562	Extractor, Cartridge
62770	Spring, Extractor Assembly
	LOWER RECEIVER GROUP (See Figure B-4.)
65323	Buffer Assembly
65308	Spring, Action

APPENDIX B

PARTS LIST - M16A2 LMG
(UNIT MAINTENANCE INSTALLED)

(Refer to Figures B-1., B-2., B-3., and B-4.)

PART NO.	NOMENCLATURE	FIGURE NO.
61562	Extractor	B-2.
61563	Pin, Extractor	B-2.
61564	Ejector	B-2.
61569	Spring, Selector Lever Detent	B-4.
61655	Pin, Takedown	B-4.
61692**	Spring, Detent, Takedown Pin and Pivot Pin	B-4.
61698**	Detent, Takedown Pin and Pivot Pin	B-4.
61704	Pin, Cam	B-2.
61705	Detent, Front Sight	B-3.
61709	Spring, Front Sight Detent	B-3.
61785	Detent, Selector Lever	B-4.
62290	Charging Handle Assembly	B-3.
62294	Pin, Firing	B-2.
62335	Pin, Retaining, Firing Pin	B-2.
62734	Hinge Pin	B-4.
62736	Hinge	B-4.
62737	Swivel	B-4.
62770	Spring, Extractor Assembly	B-2.
64507	Post, Front Sight	B-3.
64553	Door Assembly	B-4.
64554	Screw, Pistol Grip	B-4.
64571	Buttstock Assembly Stowage	B-4.
64573	Screw, Swivel	B-4.
64574	Buttstock	B-4.
64576	Grip, Pistol	B-4.
64577	Screw, Buttcap	B-4.
64578	Spacer Buttcap	B-4.
64579	Buttplate Assembly	B-4.
65303	Bolt Assembly	B-2.

APPENDIX B (CONT)

PART NO.	NOMENCLATURE	FIGURE NO.
65308	Spring Action	B-4.
62323	Buffer Assembly	B-4.
65349	Handguard Assembly	B-3.
65352	Washer, Lock	B-3.
65353	Screw, Forward Grip	B-3.
65356	Pin, Roll	B-3.
65357	Grip, Carrying Handle	B-3.
65358	Shaft, Carrying Handle	B-3.
65359	Grip Forward	B-3.
65360	(2) Washer, Spring Belleville	B-3.
65370	Pivot, Bipod Leg	B-3.
65372	Spring, Bipod Legs	B-3.
65373	Spring, Pin, Tubular	B-3.
65375	Leg, Bipod, Adjustable	B-3.
65377	Foot, Adjustable Bipod Leg	B-3.
65378	Detent, Adjustable Bipod Leg	B-3.
65379	Spring, Detent, Adjustable Bipod	B-3.
65381	Pin, Spring, Tubular	B-3.
90001	Washer, Lock (MS-35335-61	B-4.
90218	O Ring	B-4.
91569	Spring Ejector	B-2.
95102	Pin, Spring, Ejector	B-2.

FIGURE B-1. KEY TO PARTS LIST ILLUSTRATIONS - M16A2 LMG

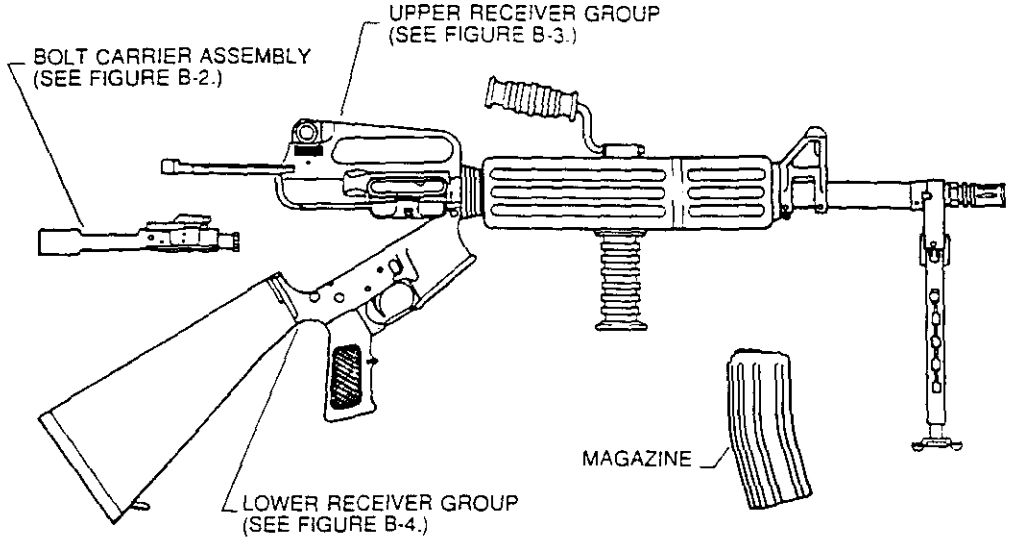


FIGURE B-2. BOLT CARRIER ASSEMBLY PARTS

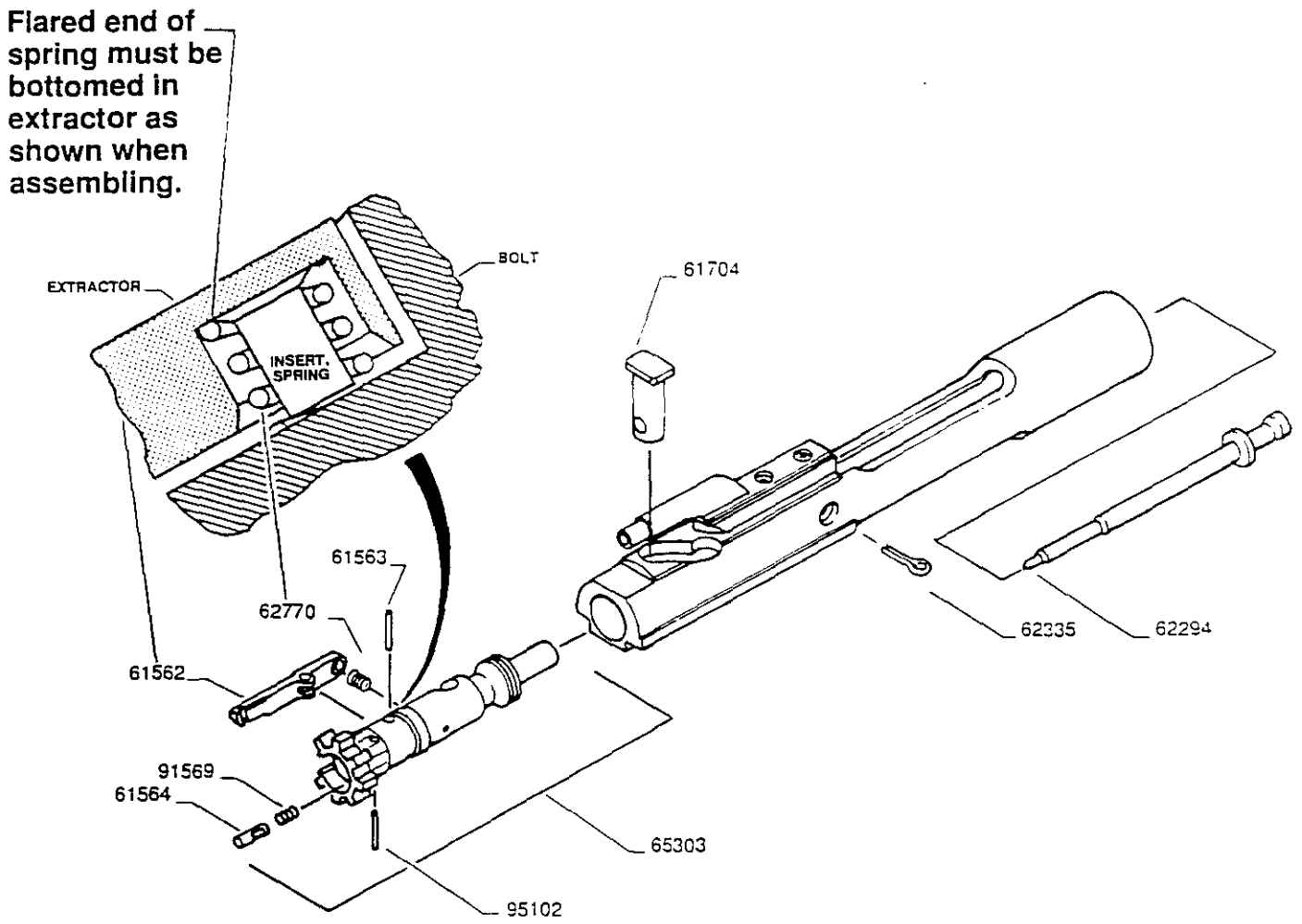


FIGURE B-3. UPPER RECEIVER PARTS

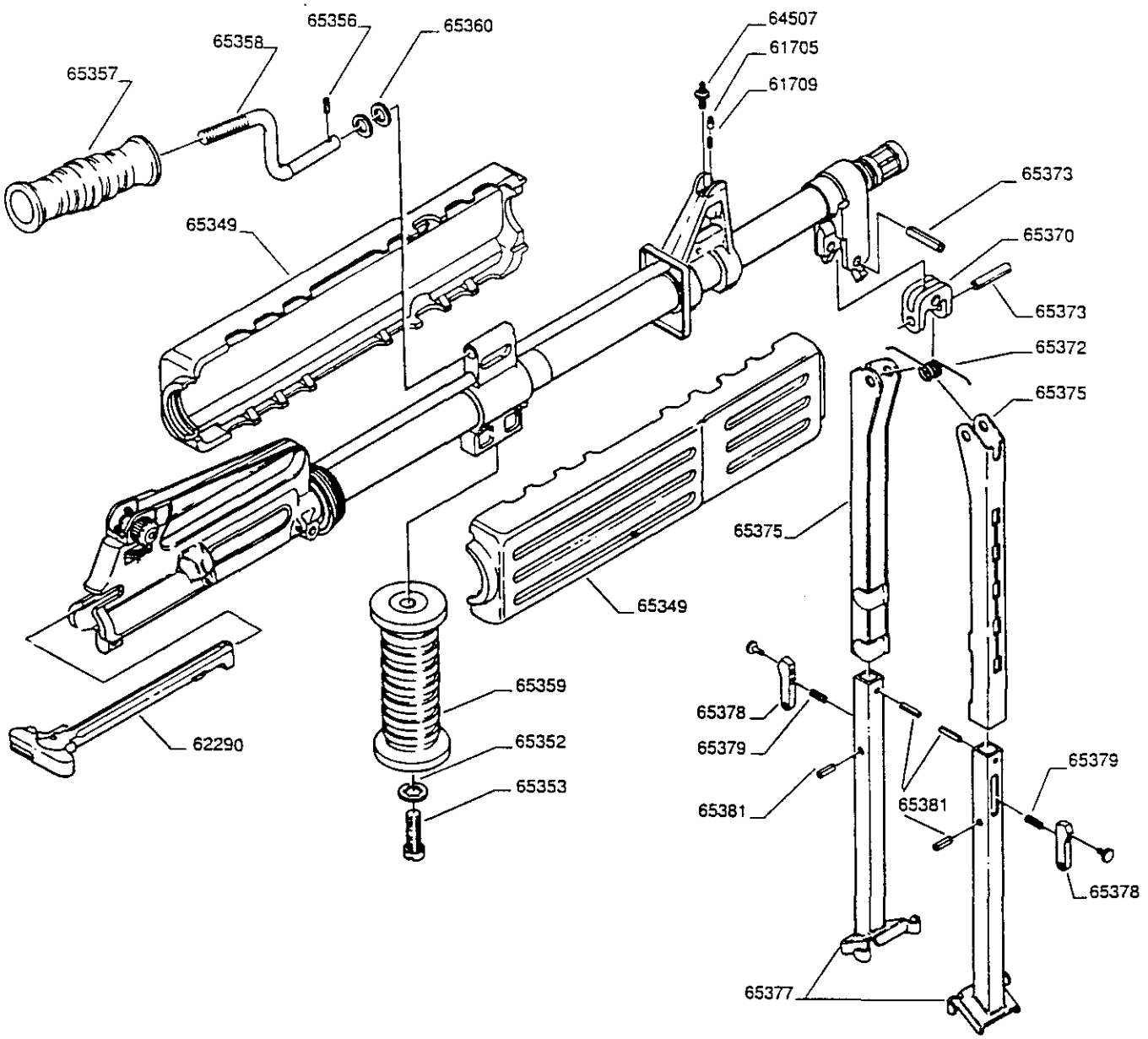
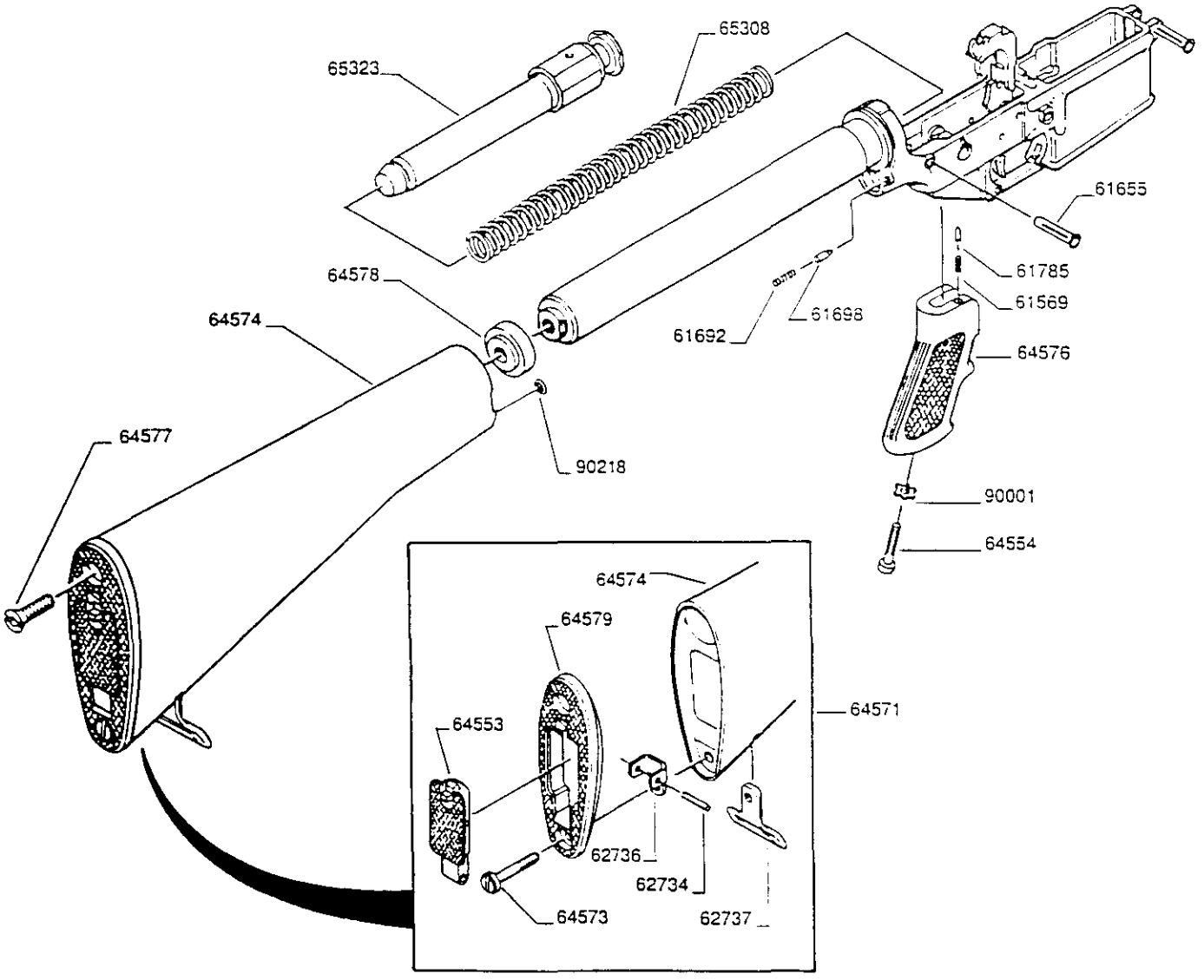


FIGURE B-4. LOWER RECEIVER PARTS



APPENDIX C

BORE CHAMBER CLEANING TOOLS

FIGURE C-1. BORE AND CHAMBER CLEANING TOOLS